Railroads Fight Unemployment Waste... p. 27

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May 2, 1960

RAILWAY AGE *weekly*

G & F's 182-mile Track Program

$1 million rehabilitation job on Georgia & Florida... p. 20

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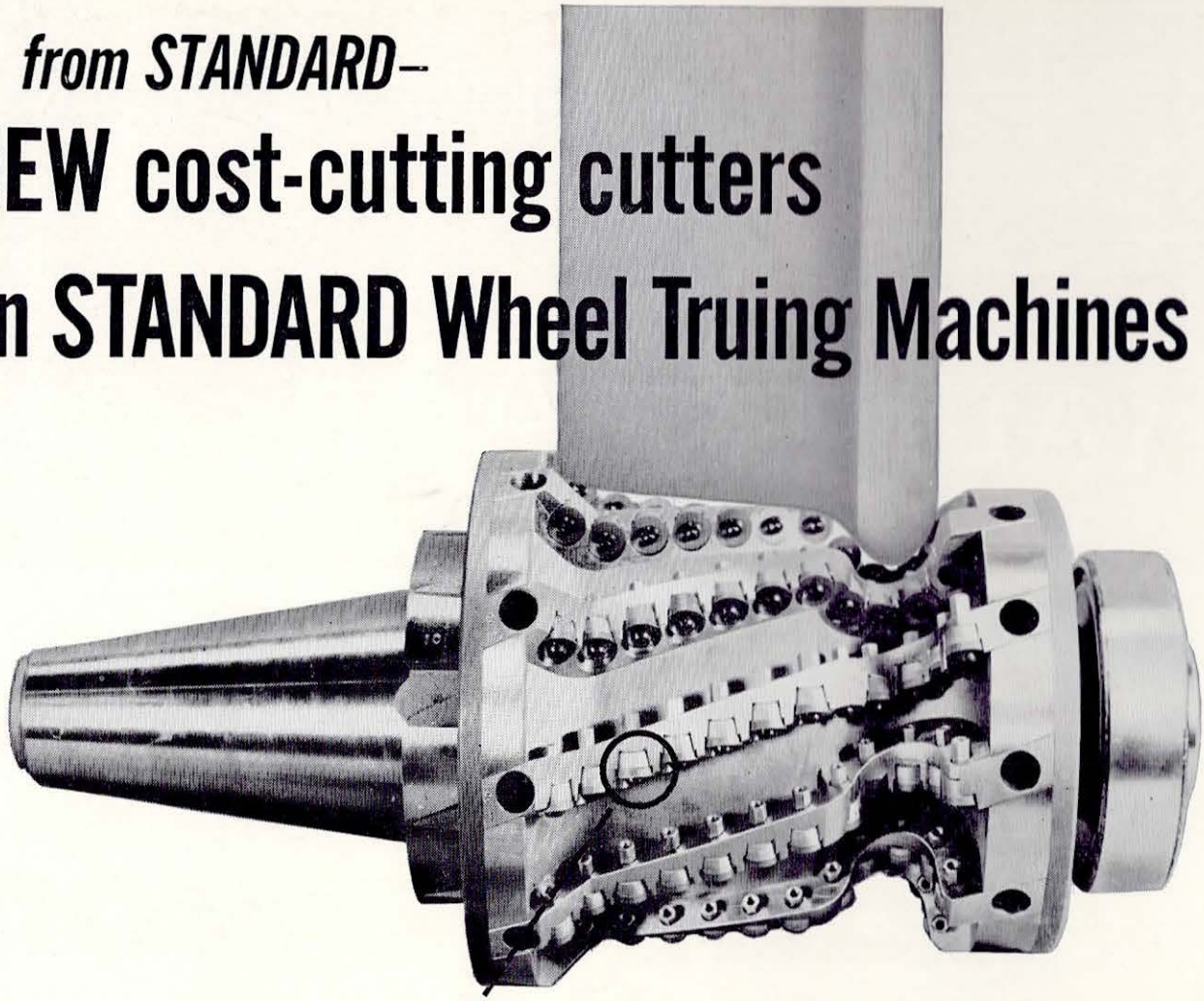
Crossing Protection

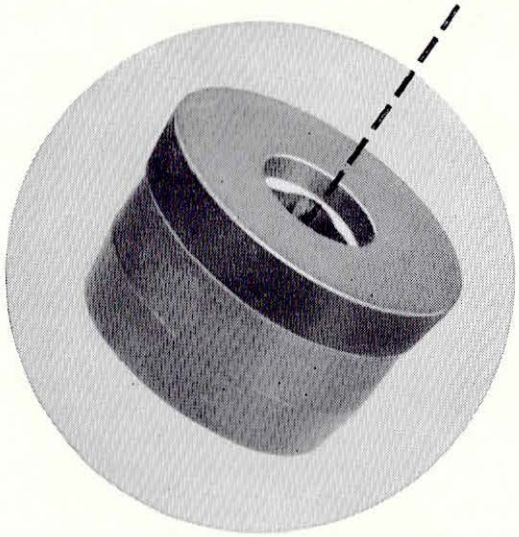
...6 roads use AFO equipment... p. 17

60 cents A Simmons-Boardman TIME-SAVER Publication

from STANDARD–

NEW cost-cutting cutters on STANDARD Wheel Truing Machines





Standard Wheel Truing Machines are now furnished with new cost-cutting cutters.

The secret is in the new tiny tungsten-carbide inserts, which are small cutting disks that provide more cutting action over longer production periods. The entire cutting tool has been redesigned to accommodate the new insert.

The nation's railroads report a 40% increase in production with the new cutters because of increased depth of cut resulting in fewer cuts required to recontour wheels.

The increased life of the new inserts create a tool cost savings of approximately 20%.

Standard Wheel Truing Machines provide an opportunity of cost savings for recontouring through lower original tooling costs, equipment availability, wheel metal savings, wheel inventory reduction and wheel turning production.

Standard Wheel Truing Machines are the standard equipment for many American Railroads in wheel recontouring. *Contact your Standard Railway Equipment representative, Hammond, Indiana, for full details.*

STANDARD RAILWAY EQUIPMENT
division of STANRAY CORPORATION

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This stubborn little brace won't give an inch

The Bethlehem Model 811 Rail Brace won't give an inch when rolling stock and straining switches put the pressure on!

Sound design is the secret of the success of this steadfast little brute. Note that the bracing part is welded solidly to the plate on which the rail rests. Driven snugly between the brace and rail web is a sturdy forged wedge containing an angular spring steel piece which can take a compressive force of 20,000 lb. Slippage is virtually prevented by the compression alone.

But just to sew things up, the Model 811 has two pawls which are turned down into slots in the wedge, locking it into place. The pawls make positive adjustment easy: just disengage them, move the wedge to right or left, then re-position the pawls in the slots. Adjustments can be made in 1/16-in. increments.

There may very well be switches on your system which the Model 811 Spring Rail Brace can brace up. A Bethlehem engineer will be glad to check these points with you and explain the 811 in full detail.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
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THE JACKSON TRACK MAINTAINER

To enjoy such OUTSTANDING preference IT'S BOUND TO BE BETTER!

Throughout the nation there are more JACKSON TRACK MAINTAINERS in use than all other machines in this category combined. And since equipment of this kind is purchased only after most careful comparison and investigation of actual performance, what could more forcefully indicate the true superiority of the JACKSON MAINTAINER.

The 1960 MODEL is even more powerful and faster than its predecessors. It also incorporates a number of other important mechanical improvements which further widen its margin of superiority. Write, wire or phone for the complete information, and judge for yourself.

Attractive acquirement plans

JACKSON VIBRATORS, INC.
LUDINGTON, MICHIGAN

RAILWAY AGE *weekly* May 2, 1960 • Vol. 148, No. 18

Week at a Glance

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Strike talk slapped down ..... p. 9

Industry spokesmen moved last week to squash reports that a railroad strike is "imminent." Most of the strike talk is centered around the featherbedding issue, which hasn't even reached the stage of national negotiations.

New 'look' in hotbox detectors p.15

General Railway Signal Co.'s new Wheel Thermo-Scanner Unit, which "looks" at the hub of the wheel instead of the journal box proper, can spot an overheated journal or a dragging brake in 15/millionths of a second.

Cover Story—How AFO protects grade crossings p.17

The equipment offers special economic advantages in welded rail territory because it eliminates the need for insulated joints.

Cover Story—G&F pushes its track program p.20

The 320-mile line is rehabilitating 182 miles of main track. The project is being financed with a loan, first of its type, approved by the ICC under the Transportation Act of 1958.

Electrification: France shows the way p.24

What large-scale electrification has done for the French National Railways—and what it could do for U. S. railroads, if they could again become a growth industry—was described at a joint AIEE-ASME conference in Pittsburgh.

$35,000,000 — and all for commuters p.26

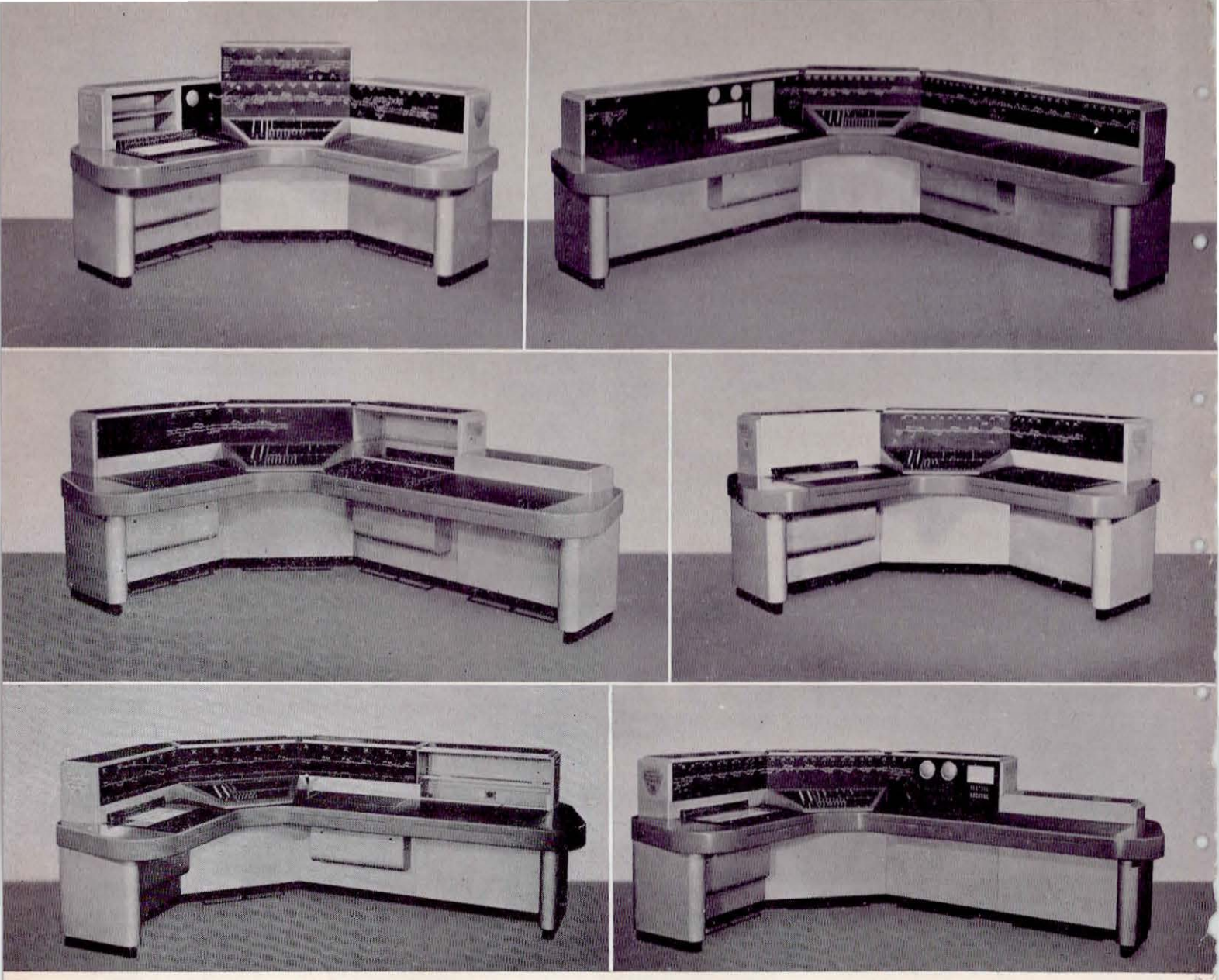
Chicago roads' investment in new suburban equipment may reach that figure if the Milwaukee's plans for replacing its conventional cars with 75 double-deckers materialize.

Cover Story—RRs fight unemployment waste p.27

Here's what some railroads, individually and in cooperation with the Railroad Retirement Board, are doing to conserve unemployment insurance account funds.

The Continuing Outrage—Creeping canalism p.33

The federal government is under growing pressure to accept —as a "gift" from New York State taxpayers—524 miles of waterways, including the venerable Erie Canal. Cost to federal taxpayers might eventually run into hundreds of millions of dollars—and the route is already more than adequately served by a railroad and a four-lane superhighway.



2,093 ~~1,836~~

~~1,400~~ Miles to be controlled by new Union Traffic Control Centers

~~13~~ 15

Since the new Union Traffic Control Center was introduced over a year ago, ~~eight~~ NINE railroads have ordered or put into operation ~~12~~ Traffic Control Centers.

These railroads have realized the advantages of Union Switch & Signal's Traffic Control Centers.

With Union Traffic Control Centers, railroads can consolidate the control of CTC in strategic locations and ultimately control an entire railroad from one central point.

A TCC unit takes up much less space than a lever type machine. And it's flexible. A 9-foot basic machine can easily be expanded vertically and horizontally to accommodate additional track diagram modular units. TCC can be applied to all types of interlockings, as well as to CTC. TCC can be used with any existing control system.

Contact your nearest Union Switch & Signal office or representative for full details about TCC.

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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NEW YORK . . . PITTSBURGH . . . CHICAGO . . . SAN FRANCISCO

Week at a Glance CONT.

Current Statistics

Operating revenues	
2 mos., 1960 ...	$1,563,389,022
2 mos., 1959 ...	1,532,213,474
Operating expenses	
2 mos., 1960 ...	1,254,520,883
2 mos., 1959 ...	1,253,755,076
Taxes	
2 mos., 1960 ...	168,158,367
2 mos., 1959 ...	153,091,379
Net railway operating income	
2 mos., 1960 ...	85,713,645
2 mos., 1959 ...	75,670,278
Net income estimated	
2 mos., 1960 ...	55,000,000
2 mos., 1959 ...	42,000,000
Average price railroad stocks	
Apr. 26, 1960 ..	92.67
Apr. 28, 1959 ..	112.33
Carloadings, revenue freight	
15 wks., 1960 ..	8,798,615
15 wks., 1959 ..	8,811,869
Freight cars on order	
April 1, 1960 ..	42,131
April 1, 1959 ..	35,487
Freight cars delivered	
3 mos., 1960 ..	13,850
3 mos., 1959 ..	7,223

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POSTMASTER—SEND FORM 3579 to EMMETT ST., BRISTOL, CONN.

Printed at the Wilson H. Lee Co., Orange, Conn.

The Action Page—Nationalization solves no problems p.38

Railroads would prosper in their own right if honest economics were applied to the problem of equitable financing of all investment in transportation facilities. There would then be no demand or justification for nationalization.

Short and Significant

Soo Line's guaranteed rate . . .

went into effect April 24, after being under suspension for more than a year. The ICC had requested a further extension, but Soo Line, faced with the opening of the lake shipping season, declined to go along with further delays. The rate covers shipments of pipe moving Sault Ste. Marie, Ont., to Chicago and also applies over DSS&A, Milwaukee and C&NW.

Struggle for control of Interstate Railroad . . .

between the Southern and the L&N, both of which have been seeking to acquire the 88-mile coal carrier through stock ownership (RA, Nov. 2, 1959, p. 7), has been resolved by the roads. Joint agreement removes L&N opposition to Southern control by preserving existing competitive rate relationships. Next step: ICC hearing on Southern's application May 10.

C&EI isn't negotiating a merger . . .

with the New York Central, says President David O. Mathews, but "if Central is interested in C&EI, we will be glad to discuss the matter with their officials." He made the statement after press reports "identified" C&EI as a possible NYC mate. Meanwhile, Mr. Mathews said C&EI-Missouri Pacific merger hopes are still alive with "certain corporate problems" under active study.

Venezuela is reported negotiating . . .

with a Canadian syndicate for construction of an extensive railway system. Reports circulating in Caracas say the syndicate would take payment in crude petroleum and iron. (In 1951, the Venezuelan government approved construction of a 2,637-mile standard-gage railroad system of which 109 miles of single-track CTC line has thus far been completed.)

Merger for C&O . . .

is a definite possibility but to date no consolidation seems to match "what C&O would bring to the union." Still, President Walter Tuohy told shareholders last week, the company "has been and is looking at a couple of possibilities that may have merit."

To make more profits per car

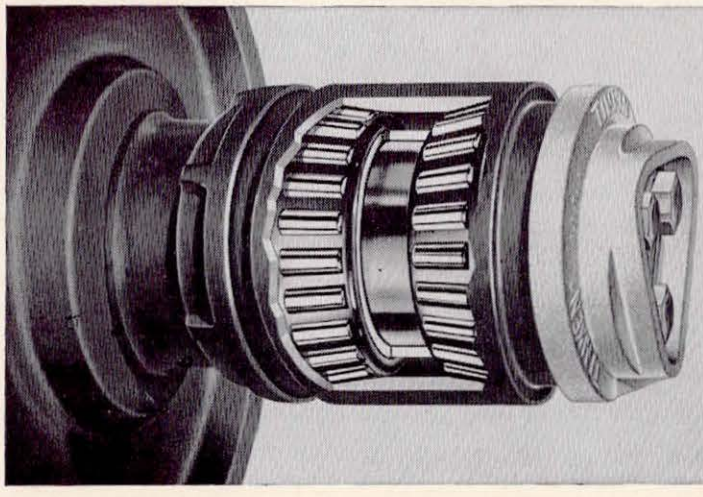
RAILROADS ARE MAKING THE "BIG SWITCH"

To realize greater return on their freight car investment railroads are equipping more and more cars with Timken® Heavy Duty-High Mileage "AP" *tapered* roller bearings. In high speed piggy-back service, cars are going 168,000 trouble-free miles a year on Timken bearings. Timken bearings boost profit per car because: 1) They solve the hot box problem. In actual service Timken "AP" bearings are averaging 110,000,000 car miles between overheated bearings. 2) They cut terminal bearing inspection time as much as 90%. 3) They will roll 4 years without adding lubricant.

93 railroads and other freight car owners have already joined the big switch to "Roller Freight". By the end of 1959, 53,270 Timken bearing equipped cars were in service or on order. And the total has jumped to over 62,000 so far this year.

Right now we're increasing the capacity of our Columbus, Ohio, railroad bearing plant to 40,000 car sets a year to meet the ever growing demand for Timken Heavy Duty bearings.

Right now is the time to switch to "Roller Freight". Timken Heavy Duty-High Mileage "AP" bearings are available for all sizes of standard axles and Class G 7 x 14. And for new cars or conversions. When all freight is "Roller Freight" Timken bearings will save the railroads an estimated $144 per car annually. Switch to "Roller Freight" now for high mileage, trouble-free service, increased profits. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".



heavy duty TIMKEN®
tapered roller bearings

Strike Talk Slapped Down

► The Story at a Glance: A railroad strike — over working rules or any other issue—is by no means imminent, or, at this point, even likely. And if the work rules question should come to a strike vote, it's unlikely that there would be any prolonged work stoppage.

That was the gist of top-level thinking among railroad men as the industry moved to squash reports of an "imminent" strike.

Talk of a "pending" railroad strike, particularly about proposed work-rules changes, was slapped down sharply last week.

Action came from several directions at once:

- President W. C. Cole of the National Association of Shippers Advisory Boards wrote 27,000 shipper-board members that "loose talk about a strike being inevitable should be discounted."
- Carrier Conference Committees stopped work on pending wage cases in Chicago to point out that national negotiations on the work-rules issues "have not yet begun."
- Union sources continued to say that "rail unions have not been threatening to strike over 'featherbedding' or any other issue."
- And the Research Institute of America updated its recent news reports for 30,000 member companies to say a featherbedding showdown may now be postponed "until even early '61."

This flurry of activity was prompted by press reports in recent weeks suggesting that a major work stoppage on the railroads is a strong possibility, and that such a crisis could develop within the next 60 to 90 days.

Such reports may have stemmed from failure to distinguish that two separate and distinct cases are pending on the railroads: the general wage movement on the one hand, and the so-called work-rules issue on the other. Only the wage cases are well advanced (see below).

Notwithstanding, talk of an early strike has stirred action and quick denials from several sources.

Mr. Cole's April 25 letter to shipper-board members pointed out that "both management and union leaders have repeatedly stated they will make every effort to seek a peaceful solution and avoid a strike.

"Even if a national crisis eventually ensues it need not result in a work stoppage or a cessation of service because of the government's own recognition of the overriding importance of continued railroad service."

Mr. Cole's views echoed opinions expressed by the carriers' negotiators in Chicago. Their move to set the record straight included this statement: "Although preliminary moves are likely within the next month or two [on work rules], pressures of already pending wage negotiations and the automatic timetables built into the Railway Labor Act make it highly improbable that the rules negotiations could approach a climax before fall or early winter."

The Research Institute said in its April 23 issue that it now looks like a rail crisis is deferred and business will have a breather.

After pointing out that a crisis on "featherbedding," if one comes, is considerable distance away, the Institute noted that "the storm could break over the head of the newly-elected President with possible repercussions extending far beyond the issues."

Rail labor, meanwhile, came into the picture via an editorial in the newspaper, "Labor." The paper suggested that pressures that could lead to a work stoppage "have come from the management side."

While most of the talk last week was about the work rules dispute, most of the action came on the wage front. One thing was clear:

Sometime over the next four to six weeks, a "lead" settlement or recommended settlement may emerge from the tangle of current wage disputes. But at the moment, there's no certainty whether it will be a binding arbitration award in the BLE wage case or the recommendations from an emergency board in the non-ops wage-fringe benefit case.

The Engineers have completed presentation of their case before the six-man arbitration panel which opened hearings April 5. Presentation of the carriers' testimony began shortly before the board recessed April 21, and was scheduled to be resumed May 2. Under the arbitration agreement, the board has 40 days (dating from April 5) in which to investigate and make its award —unless further time is granted by the parties. Some observers are looking for a decision about June 1, perhaps sooner.

Meanwhile, Emergency Board No. 130, created by President Eisenhower April 22 to seek a settlement in the wage-fringe benefit dispute between

(Continued on page 16)

GE Unveils High-HP Diesel

A new high-horsepower main-line diesel locomotive has been placed on the market by the General Electric Company.

The announcement, made last week by Ralph J. Cordiner, GE chairman, answers a question asked by many railroad men: "What is GE going to do with its high-horsepower diesel that has been under test for many months?"

Specially designed for high-speed service, the 2,500-hp four-axle locomotive is powered by a 16-cylinder, four-cycle, turbocharged diesel engine. It is 60 ft 2 in. long, and weighs 260,000 lb—or 65,000 lb per axle. It will have a pressurized carbody with filtered air being delivered to all electrical components, the engine hood and engine cab, a feature long sought by railroads.

Designated the U-25B, the locomotive, GE pointed out, with 625 hp per axle, will develop 50% more horsepower than the average main-line diesel unit. It is, however, rated only slightly higher than the Electro-Motive 2,400-hp, six-axle SD-24, and Alco's 2,400-hp, six-axle DL-600 B and its recently introduced four-axle DL-640 locomotives.

General Electric is not a newcomer in the domestic market, having developed and produced high-horsepower main-line electric and gas-turbine locomotives and many diesel-electric switchers. For years, GE has supplied foreign countries with both switching and main-line diesel-electric motive power.

Mr. Cordiner, announcing plans to enter the main-line diesel market, said shipments would not begin until next year because of production problems.

'End Transport Subsidies'—Mitchell

Secretary of Labor James P. Mitchell last week suggested that railroad labor unions and management join in recommending "a fundamental overhauling of the Interstate Commerce Commission" and "the gradual elimination of all government subsidies in transportation."

At the same time the secretary also recommended that management's demand for an end to featherbedding be given "most careful consideration and deliberate study—a consideration and study that cannot take place under the gun of a deadline."

The Mitchell recommendations were made in an April 27 address before the Railway Employees Department of the AFL-CIO in Chicago. His theme was that a competitive position for railroads cannot be achieved "if the collective bargaining table continues to be the only instrument for communication between rail unions and rail management."

Secretary Mitchell said the country needs a "fresh approach" to regulation. He added that regulation should produce equality of competition, "and not an index to the competition of yesterday." And he thinks joint labor-management recommendations would go a long way toward this end.

"If a joint recommendation is not possible, certainly separate recommendations would be in order," the secretary said. As to subsidies, he said:

"The government subsidizes the building of ships . . . It deepens and develops inland waterways. It subsidizes air lines through the construction of terminals and the carrying of mail. It has subsidized truckers through building public roads. The railroads remain the great unsubsidized portion of the American transportation system.

"I suggest that we seek the gradual elimination of all government subsidies in transportation, and the introduction of user charges so that each mode of transportation carries its fair share of the burden of public expenditures from which they now profit unequally.

"I believe that the railroad industry position on matters like government regulation and user charges would be a strong one, and would contribute to an improved competitive posture for railroads, if it represented the best thinking of both labor and management—if it were a total industry position."

Secretary Mitchell also told the labor leaders that lack of flexibility in railroading "means lost jobs and a continuously deteriorating position."

Urban-suburban transportation, "which is going to get worse before it gets better," is an area where the secretary thinks the railroad industry "could step forward with a comprehensive transportation plan." He suggested that city terminals, rights-of-way and established links between suburb and city are railroad advantages which such a plan might take into account.

Watching Washington *with Walter Taft*

• **MAY 1's WAGE INCREASE,** as anticipated here (RA, April 18, p. 10), was one cent per hour for railroad employees working under agreements with escalator clauses. It will cost railroads about $20 million a year.

THE COST-OF-LIVING INDEX, published by the U.S. Bureau of Labor Statistics for March, provided the raise. The index, at 125.7, was 8.6 points above September 1956's index of 117.1, which is the escalator-clause base. Up or down wage adjustments of one cent per hour are required for each half-point change from this base. So, the March index built the escalator-clause increases up to 17 cents per hour, i.e., one cent in addition to the 16 cents already provided.

PENDING WAGE DEMANDS of unions representing railroad employees seek inclusion of these escalator-clause increases in the basic rate on which newly-demanded raises will be bottomed. Continuance of the escalator clause arrangement, however, is demanded only by unions representing railroad operating employees.

THE NON-OPS want to end the escalator deal because they want to get away from contracts with moratorium or specific-term provisions—like the three-year agreements which expired last November. While the non-ops wouldn't mind escalator clauses not tied to moratoriums, they recognize that such a tie-up has been the usual arrangement. And they want most of all to return to contracts under which they can serve new demands at any time.

• **THE FULL-COST BASIS** for identifying the low-cost carrier in competitive rate situations is what at least one examiner, L. E. Bartoo, thinks is ICC policy. Commission decisions, though tending that way, have never announced such a policy. And the railroads have opposed it, contending that carriers should be permitted to compete with any rate which is compensatory, i.e., above out-of-pocket costs.

THE EXAMINER recommends that the Commission condemn railroad rates on the out-of-pocket-costs-plus basis which are proposed to compete with water-carrier rates on the full-cost basis. Traffic at stake is newsprint paper moving from Alabama and Tennessee points to Houston, Tex. Because the barge rates, with which railroads propose to compete, do cover fully-distributed costs, the examiner calls the barge lines "the low cost transportation media on this particular traffic."

THE RAILROADS "should not be permitted to lower their rates to the out-of-pocket-cost level to force the barge lines to retain the traffic at rates differentially lower than the rail rates and below the barge lines' fully-allocated cost of transporting this traffic," Mr. Bartoo advises the Commission. Meanwhile, he had reported that the railroads once had the business. They lost it to a barge line which published the rate they are now seeking to meet.

LOOK OUT

To passengers, a window is to *look out of*. To men who build structures or vehicles, a window is one thing to *look out for*. Experience has taught them to look beyond price and specifications alone. Does the manufacturer have "know-how" in *all* types of windows? Is it an old, established company? Does this company design, extrude, fabricate and anodize aluminum sash under its own roof?

THESE THREE QUESTIONS DETERMINE RESPONSIBILITY

The Adams & Westlake Company can say "YES!" to any or all three of these vital questions.

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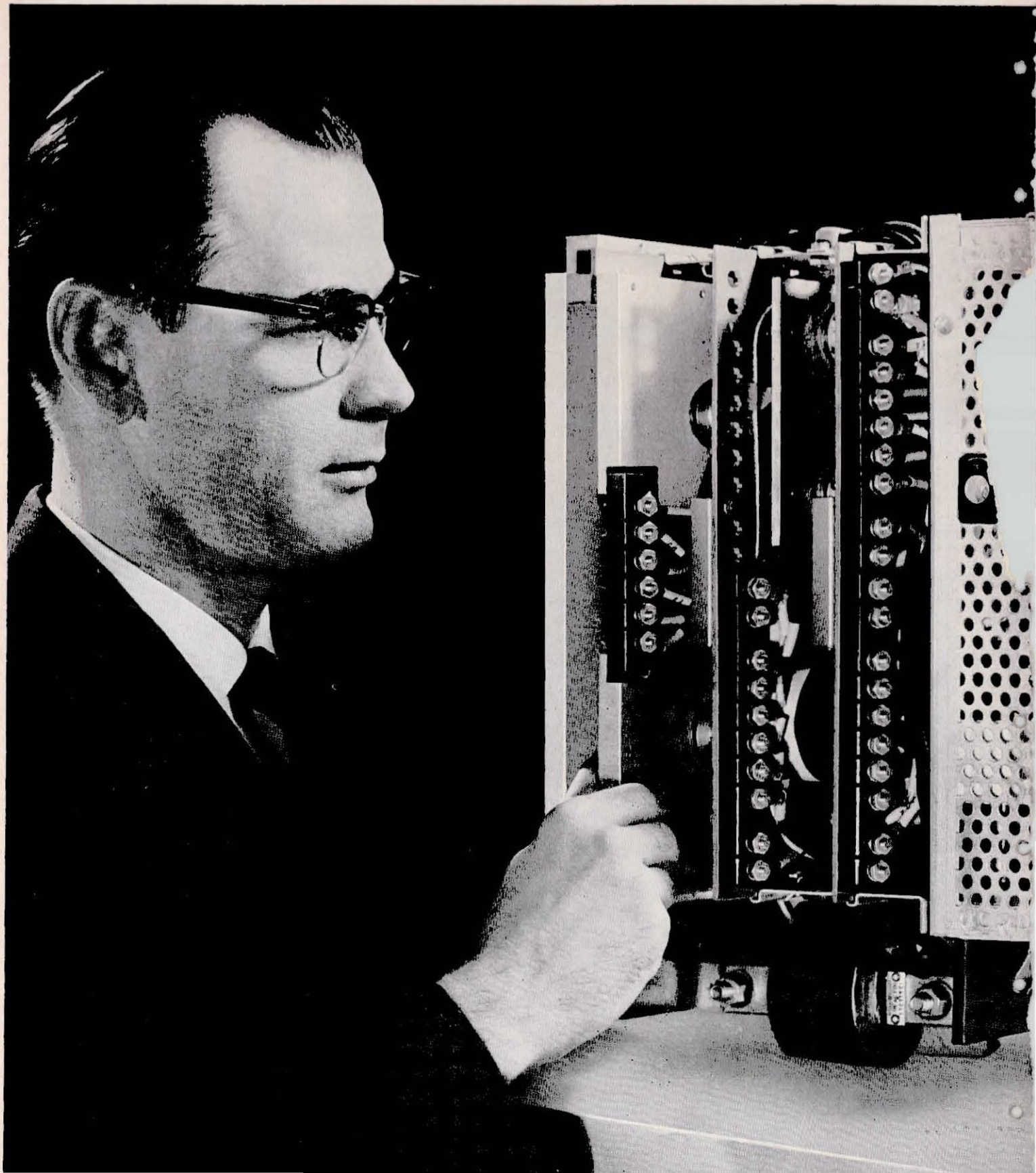

CERTIFIED renewal part

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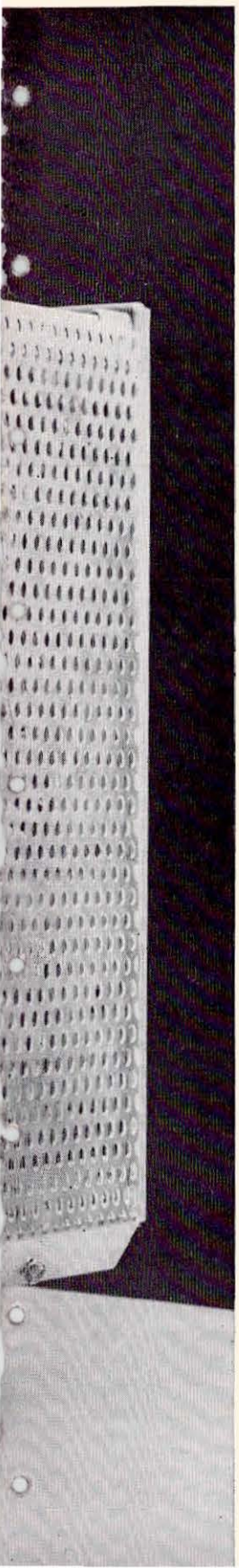

Reduces Maintenance, Minimizes Downtime

General Electric now offers you a transistorized regulator design which eliminates contacts and moving parts. Electrical components are card-mounted. Functional circuits are on separate, easily removed cards. Electrical connections are made to readily accessible terminals at the front of each card. General Electric's new transistorized Static Voltage Regulator gives fast, reliable voltage regulation at low cost for a wide variety of auxiliary generators. Makes maintenance easy, minimizes downtime. Optional built-in reactor-type current limit protection.

For more information, contact your General Electric Railroad Regional Parts Center or write for Bulletin GEA-7068, Section 106-01, General Electric Company, Schenectady 5, New York.

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RR Purchases Over-Inspected?

Our correspondent, in raising this question, wondered why it was necessary for a railroad buying a particular product to a designated specification to inspect it at every step between manufacture and application. Taking paint as an example, he commented that most other industries rely on the manufacturer's certification that the product is what the specifications call for, because, if it is not, the manufacturer will make good. On the railroads, though, powdered box car red is inspected in the powder form, again in the mixed form, and again at application time.—*Editor.*

Very few railroads continue the inspection of paint materials to the degree described in your question. Others, however, continue attempting to write composition specifications even though they do not carry out a very complete inspection program of the specifications which govern their purchases of paint.

The one certain result is that they find themselves unable to keep pace with the chemistry of the paint industry. In consequence, composition specifications invariably are soon outdated.

The acid test of any paint, of course, is its actual performance on the job. Knowledgeable maintenance engineers are using this standard as the most important one in selecting protective coatings. We would welcome such a program on the part of the railroads and feel quite strongly that no supplier would object to this practice which might be called "performance testing" by the consumers—in this case the railroads. Certainly, costs to the railroads could be dropped through elimination of superfluous inspections and railroads would then rely on suppliers to furnish materials meeting representative standards of performance.

Failure to match the performance requirements on the job would result in the action always taken by a consumer not satisfied by the quality of any goods or services he has purchased. This is quite simple and readily understood by all concerned. Some of the largest railroads already operate in this fashion. It is our belief the practice will extend itself, at least insofar as paint products are concerned.

We do not think we can possibly be alone in our policy of taking care that the things we do today will keep us in business tomorrow. In other words, we propose to continue our business far into the indefinite future and perhaps we need our customers more than they need us in order for us to accomplish our aim. A clear understanding of this type of program by the railroads which still follow inspection practices established many years ago, would, we believe, result in simplified and more economical operations for them. [*These comments were provided by a sales executive of a company with a large railroad paint business. Our contributor prefers to remain anonymous.—Editor*]

A forum for railroaders who want to explore questions of importance to their industry, this column welcomes both questions and answers from readers at all levels of responsibility in the industry and associated fields. We'll pay $10 to any reader submitting a question that forms the basis for a column discussion. Address correspondence to Question and Answer Editor, Railway Age, 30 Church St., New York 7, N.Y.

Why Not Run-Through Yard Switches?

Run-through yard switches, sometimes called automatic switch stands or hand-throw spring switches of the yard type, or snap action hand-throw switches, have been used to a greater extent in recent years in modern retarder classification yards. In such installations they are used primarily at the bowl end of the class yard and also in the receiving and departure yards. Their main advantage is, of course, that they can be trailed through without damage to the operating rod, switch stand or mechanism. All 250 hand-throw switches in the L&N's Radnor Yard at Nashville are of the run-through type. These switches will latch in the opposite position when trailed through.

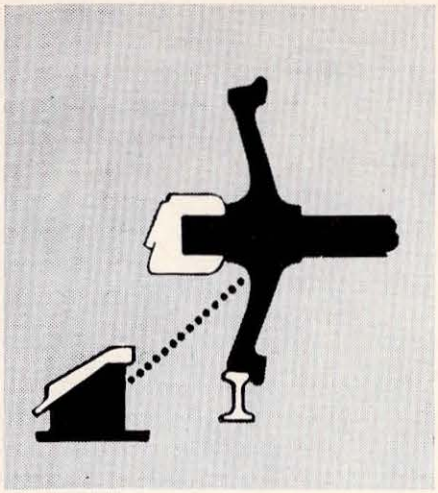
The main difference between these yard switches of the run-through type and spring switches for mainline service is that the yard switch when trailed through will "snap over" and remain in the position actuated by the wheels, whereas the mainline spring switch returns to its original position.

As yard movements are directed by the switch crew foreman or switchman on the ground, normal practice—where hand-throw switches are used—is, of course, for the man on the ground to operate the switch and then direct the engineer to move over it.

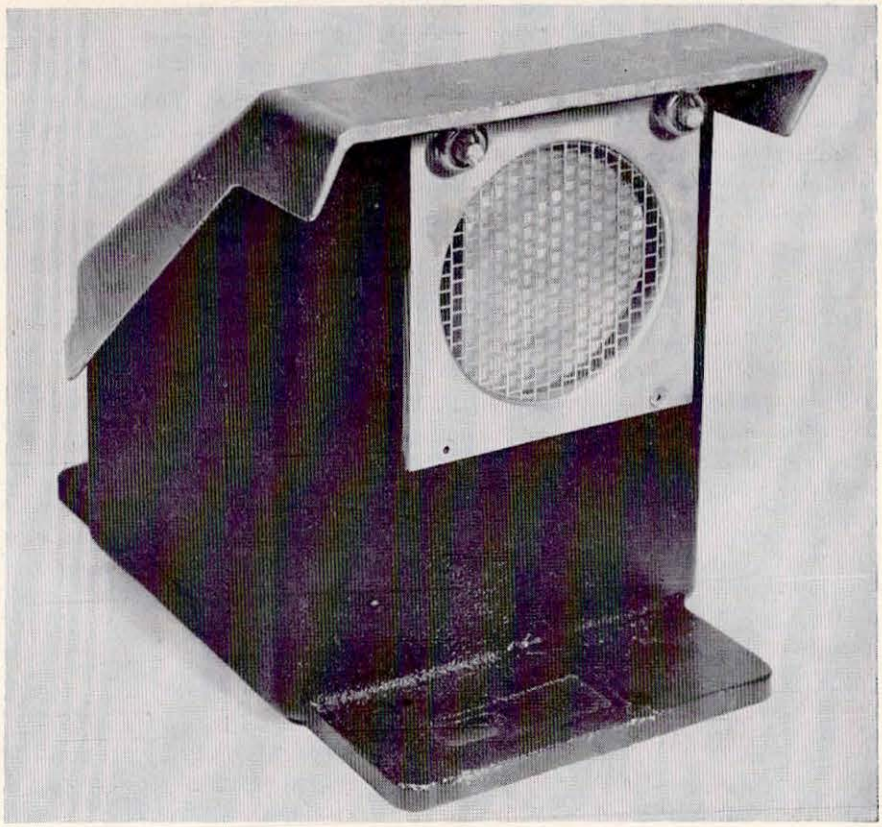
There are two schools of thought concerning use of these run-through yard switches. One is that where an engine or car inadvertently trails through a hand-throw switch, the run-through type more than pays for itself in preventing damage that would be caused if the switch did not snap over when it is trailed through. Trail-through movements occasionally occur when the hump engine is trimming in the class yard and is shoving cars toward the bowl end. Instances have occurred where cars have been pushed out onto the ladder track. In such a case, a snap action switch would go over and no damage would result.

However, the second school of thought is that as the engine movements should be directed by a man on the ground observing the position of switches, signals and other movements in his area, there is no excuse for trailing through a hand-throw switch. Therefore, it is bad psychology, in effect, "to tell the engineer that no damage will result if he should trail through a switch which has been set against him." —*Engineer—signals and communications.*

[*In passing this question for comment, we turned up two points of view, which are summarized above. One man added that he is opposed to any device that makes human error possible, since, he says, "it's a basic law of human behavior that if it's possible to make a mistake, sooner or later, someone will make it."—Editor*]



▲ **SCANNER VIEWS THE HUB** behind the journal box at a point common to both plain and roller bearing cars. Viewing is at right angles to the track.



RADIOMETER or viewing unit, in cast iron case, has screen strengthened plastic window for keeping dirt and moisture out. ▶

New 'Look' in Hotbox Detectors

General Railway Signal Co. has entered the hotbox detection field with a device that can spot an overheated journal or a dragging brake in 15/millionths of a second.

GRS's new Wheel Thermo-Scanner Unit is designed to detect heat resulting from improperly performing journals or from defective brakes. It differs from other "detectors" now on the market in two important respects:

1) Instead of "looking" at the journal box proper, the new device views the hub of the wheel.

2) Its sensing element does not have to be heated by the radiation emanating from the defective journal or brake —but reacts directly and almost instantaneously to the particles of energy hitting it.

The new device employs a radiometer (which includes the optical system and the heat sensing element) developed by the Eastman Kodak Co.

The radiometer views a 1-in. by 3-in. area of the hub of the wheel at a point common to both plain and roller bearing cars. GRS research indicated that the hub provided a natural collector for bearing heat. Viewing at this location puts all bearings in the same proportionate temperature range and makes the heat-sink effects of the side frame unimportant. The result is a graph which clearly indicates which bearings are heated above normal. GRS says that misinterpretation resulting from confusing overheated journals with the normally hotter roller bearings should be reduced.

The infrared radiation from the hub enters the radiometer through a filter which passes only the desired wavelength range. A concave mirror focuses the radiation on the sensing element. There are no lens transmission losses.

Time: 15 Microseconds

The heat sensor in the new device is a tiny, sealed element responsive to photons (particles of energy—in this case, infrared light or heat energy). The photon detector is directly sensitive to particles of energy. Since it requires no heating it can react in only 15 microseconds (0.000015 second).

(Other "detectors" use a thermistor bolometer, which changes its resistance when heated by radiant energy.)

The trackside radiometers are housed in cast iron cases. A shutter, to seal out light, opens automatically when the train approaches; it closes after the train has passed. No active electronic components, other than the sealed detector cells, are housed at trackside. As the device views the hub at right angles to the rails, only one set is required to take care of bi-directional train operation.

All electronic components—dual channel amplifier, gating unit, power supply and relays—are located away from the track. All interconnecting cables are plug coupled. The amplifier is transistor operated. Power requirements are 100 watts operating, 15 watts standby, at 105-130 volts, 60 cycles ac.

A single wheel detector to trigger each wheel scanning sequence is required at each installation. The wheel detector is encapsulated in epoxy resin for moisture protection. It clamps to the rail, requiring no drilling.

The system provides an output suitable for any standard pen recorder. This recorder may be at the site or it may be remotely located. For distances in excess of two miles, GRS recommends Data-Tran, its telemetering system.

STRIKE TALK SLAPPED DOWN *(Continued from page 9)*

the railroads and 11 non-operating unions, has until May 22 to submit recommendations to the White House —unless both sides agree to an extension. Indications are that the organizations will press for a wrapup of the hearings within the 30-day limit—and that could push the non-op case out ahead of the BLE wage arbitration proceedings.

G. E. Leighty, chairman of the non-ops' national committee, said the group will have "seven or eight" witnesses, including economists Eli Oliver and W. F. Homer and several union presidents. Actual presentation of the case, he estimated, would take about 20 hours.

From a labor cost standpoint, the non-ops' demands are higher than those of the BLE. Carrier estimates place the annual cost of non-op demands at about $465,000,000 for the non-op group alone, and at more than $700,000,000 if the benefits demanded were extended to all employees. In contrast, the BLE wage demands would bear an annual cost tag of $45,262,000 for the Engineers alone and about $655,000,000 if applied to all rail workers.

Fringe benefits are another factor —the BLE case concerns wages and the cost-of-living escalator only, while the non-ops are seeking benefit increases estimated to cost about $173,500,000 annually. Demands cover more liberal vacation and holiday provisions; extended hospital, medical and surgical insurance benefits for employees and their dependents and for furloughed employees; and free group life insurance. The carriers have countered with proposals to cut wages by five cents per hour and revise certain provisions of the insurance and vacation agreements.

The wage issue involves non-op demands for a 25-cent hourly increase vs carrier demands for a 15-cent hourly reduction (bringing the total reduction proposed to 20 cents an hour).

Opening statements indicated that the carriers will rely heavily (as they have in the BLE case) on two points: an outline of wage relationships between the railroads and other industries and proposals for bringing labor costs in line with those prevailing in industry generally; and a survey of the railroads' ability to pay higher labor costs and, as Attorney Howard Neitzert put it, even "their ability . . . to continue to pay their present labor costs."

In his opening statement, Mr. Neitzert contended that since 1949, average hourly wages and earnings of the non-ops "have risen precipitously above the levels . . . in manufacturing industries —producing a 20-cent advantage in average hourly earnings which is now enjoyed by railroad non-operating employees." The carriers' wage proposal would wipe out that claimed 20-cent advantage.

Evidence to be presented by the carriers, he said, will also show that the carriers cannot pay any increase in labor costs and that "immediate reductions in labor costs may be essential to the solvency of a large segment of the industry."

A majority of industry employees are covered by the 11 organizations cooperating in the wage-benefit movement.

Lester P. Schoene, counsel for the organizations, opened with the argument that improvements in rail employee wages and benefits haven't kept pace with those in other industry. He also sought to establish separate consideration for working conditions and wage increases (Mr. Neitzert countered with the comment that "these are not in fact separable issues, in that both involve labor costs").

Fresh from a triumph before the U. S. Supreme Court in the C&NW-ORT job stabilization case, Mr. Schoene laid stress on the time lapse since the employees have made wage and benefit gains. His contention: Employees have had no improvement in vacation or holiday benefits since 1954, in health and welfare benefits since 1956, and no improvement in wages since 1958.

Mr. Schoene also quoted from the high court's majority opinion in the ORT case, in attempting to have the board consider points which the carriers contend are not bargainable—specifically, the health and welfare demands relating to employee dependents and furloughed employees and the employee life insurance demand. He told the board that it has the responsibility to make recommendations on the merits of the issues, regardless of legal action which the carriers have instituted to obtain a ruling that the issues are not bargainable under the Railway Labor Act

Mr. Neitzert, however, said the carriers take the position that the demands do not come within the scope of mandatory bargaining under the Act, "that it is unlawful for these organizations to insist upon these demands, and that it would be improper for your emergency board to recommend that the carriers enter into agreements . . . concerning the subject matter of these demands."

John T. Dunlop, professor of economics at Harvard, is chairman of the board. Other members are Benjamin Aaron, of the Institute of Industrial Relations, University of California at Los Angeles; and Arthur Sempliner, Detroit attorney and judge.

New England Merger Ruled Out

Six New England railroads have concluded that merger isn't, at least for the time being, the answer to their problems. But they're working toward increased interline cooperation aimed at "substantial economies and improved service."

Maine Central President E. Spencer Miller, who is also chairman of the New England Railroad Presidents' Conference, issued the following statement following completion of a study by the J. G. White Engineering Corp. of New York:

"The New England presidents consider that merger at the present time is not feasible due to the depressed earning power and the depressed value of securities of certain carriers caused in great measure by enormous passenger deficits and inequitable and burdensome taxation.

"It is the consensus of the New England railroad presidents that if the earnings of the New England carriers can be increased by the amount of the present passenger deficits, merger would be a distinct possibility which, in turn, would be productive of accomplishments of certain recommendations in the White report, not otherwise feasible, and of further and very substantial financial improvements with better freight service and rates for New England."

From the White report, however, came recommendations for several changes in present operating procedures which the presidents have referred to "task forces" on their respective roads. These recommendations involve:

- Operation of freight trains through junction points without stops for classification.
- More efficient routing of freight.
- Abandonment of parallel railroad lines.
- Reduction of freight car per diem charges.

New England roads involved in the studies are the Maine Central, the Boston & Maine, the Bangor & Aroostook, the Rutland, the New Haven and the Boston & Albany.

How AFO Protects Crossings

Six major railroads have installed audio frequency overlay (AFO) track circuit equipment at eight highway crossing installations. The equipment also has been ordered by six other railroads.

AFO equipment, manufactured by Union Switch & Signal Division of Westinghouse Air Brake Company, eliminates the need for installing or maintaining insulated joints. This offers special economic advantages in welded rail territory where cutting of rail is avoided. In electrified territory, both insulated joints and impedance bonds are eliminated. The equipment fills the need for applying highway crossing control track circuits without disturbing existing signaling circuits.

The fail-safe equipment permits installation of highway crossing signal control circuits with complete directional control and "island" operation as provided with three conventional track circuits.

With AFO equipment, approach circuits as long as 4,000 ft may be operated. This is long enough to give a 20-second warning time for the approach of a train traveling as fast as 136 mph.

The six railroads which have installed the equipment are the Santa Fe, the Rock Island, the Chicago South Shore & South Bend, the Detroit, Toledo & Ironton, the Louisville & Nashville and the New Haven.

One of the eight installations was a phantom trial installation (no actual crossing, but recorders indicating the operation) with full-length approach circuits. Four are complete systems with approaches circuited with AFO equipment, and three are installations using AFO to establish "island" track circuits (positive circuit across the highway).

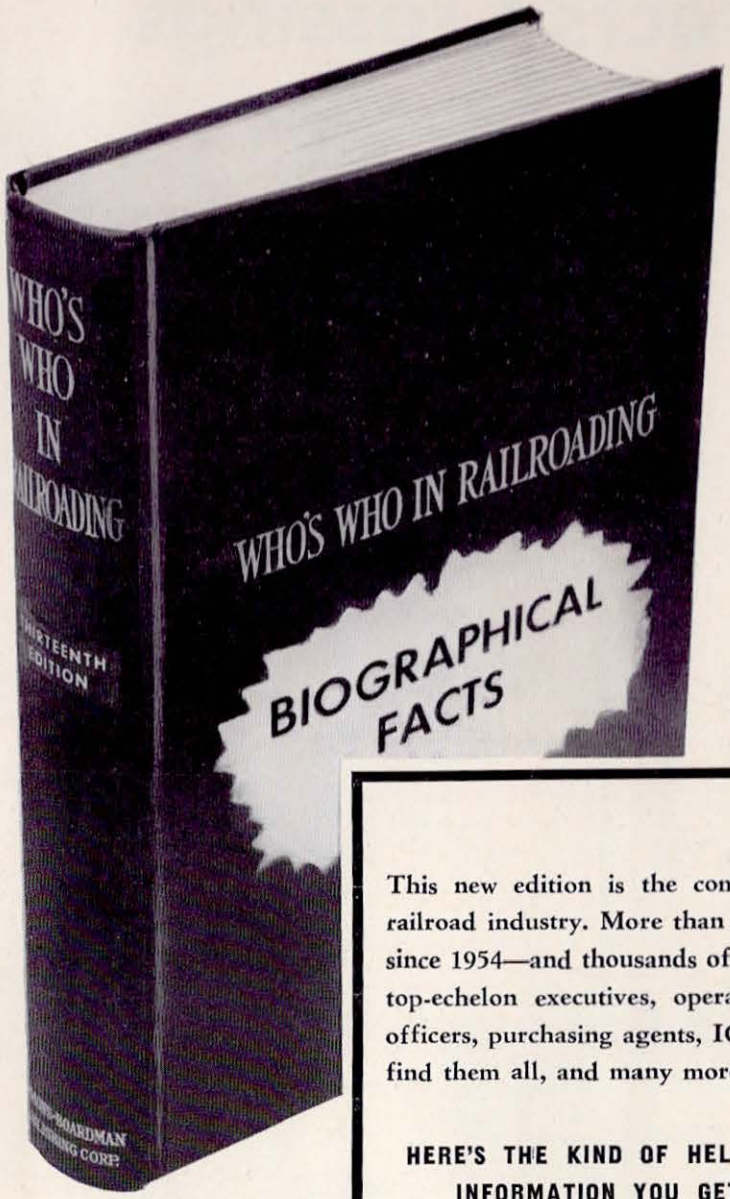
The audio frequency overlay circuit consists of a transmitter feeding a current of 1,000 to 3,000 cycles per second into the rails. One transmitter is at the beginning of an approach circuit. Its associated receiver is at the far side of the highway crossing from the transmitter. A second transmitter sending out another current of different frequency is at the beginning of the approach circuit from the other direction. The second receiver is also across the highway from its transmitter. Thus, the two currents overlap on the crossing forming the "island" circuit.

A train entering one of the approaches shunts the circuit, cutting the thousand-cycles-per-second current from its receiver. This causes the crossing protection equipment to begin operating. When the rear of the train passes the receiver (opposite side of the highway from which the train entered the crossing) the equipment ceases operation.

Audio frequency overlay equipment can be adjusted so the leading wheels of an approaching train will shunt the circuit within 100 to 150 ft of the transmitter rail connections. Because approach circuits are usually hundreds or thousands of feet long, this 100-ft leeway is not critical. Insulated joints are not required, and the AFO overlay circuit can be superimposed on existing track circuits without interference. This overlay type of circuit, however, cannot be used for triming circuits, or where cutouts and restarts are required at crossings involving station stops and switching moves.

(Continued on page 34)

AFO EQUIPMENT offers special economies when used in welded rail territory because it eliminates need for insulated joints. Approach circuits may be as long as 4,000 ft, increasing flexibility at industrial-track crossings like the one above.



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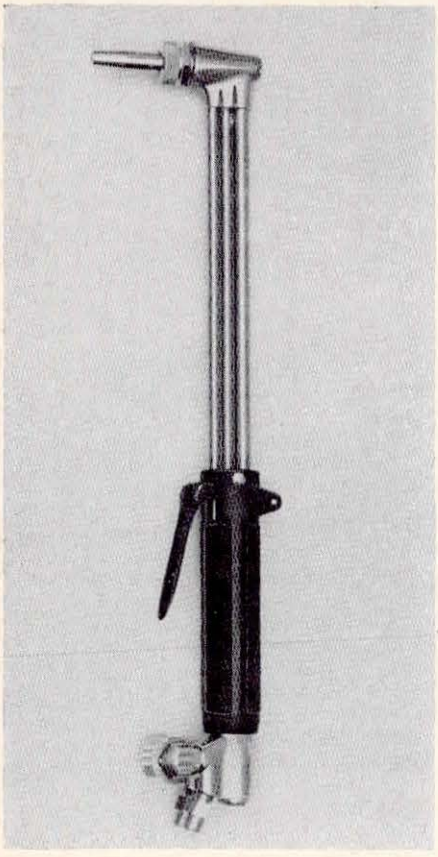
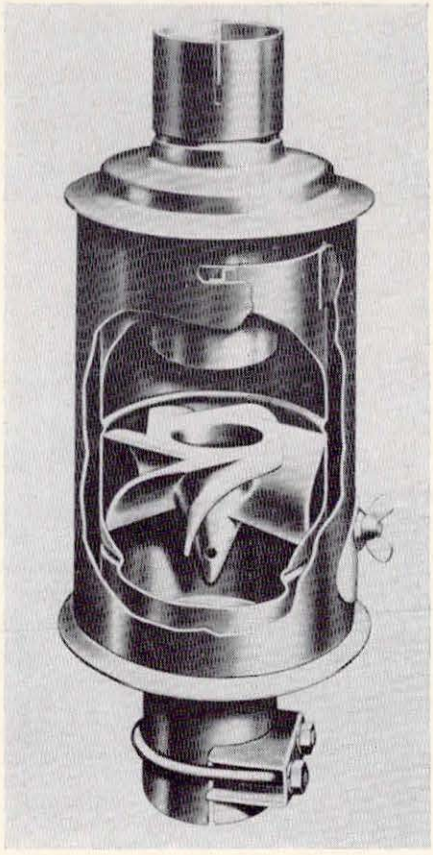
New Products Report



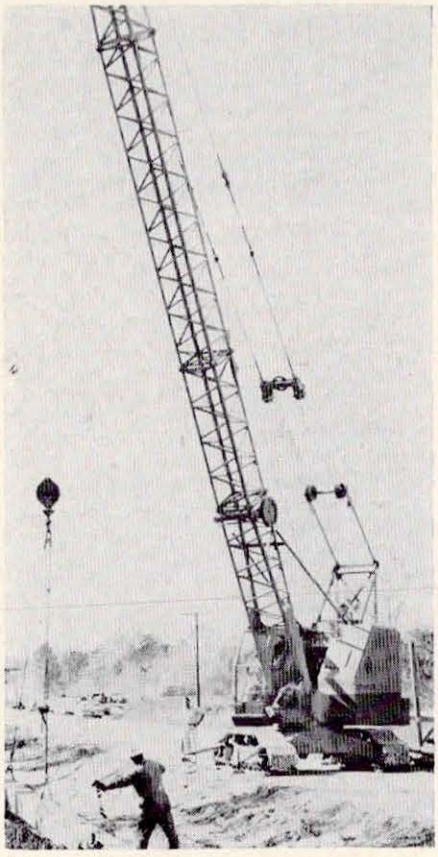
Cutting Torch

The Tuf-Tony cutting torch has a flow capacity which enables it to cut 24-in. steel. It has a slip-proof grip with adhesive handholds and is equipped with an over-or-under cutting lever which is easily reversed. An Ease-on oxygen control valve permits gradual introduction of cutting oxygen. The torch is available in 21- and 36-in. lengths, with heads of 75 and 90 deg. *Smith Welding Equipment Corp., Dept. RA, 2633 Fourth St., S.E., Minneapolis 14.*



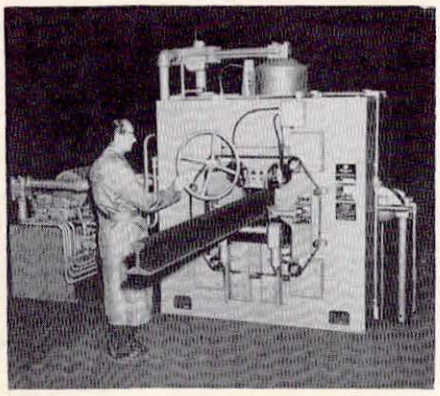
Spark Arrestor

The Air-Maze vane type spark arrestor for mobile and stationary internal combustion engines has passed U.S. Department of Agriculture, Forestry Service, test specifications. It employs a centrifugal action principle without the use of moving parts. Standard models, in aluminized steel with cast ductile iron vanes, may be had in four sizes to fit engines from 150 to 1,200 cu in. displacement. *Air-Maze Corp., Dept. RA, 25000 Miles Road, Cleveland 28.*



Crawler-Mounted Crane

The new Model 330 "Sprawler," a crawler-mounted crane, can lift more than its own weight, according to the manufacturer. Working in a 12-ft radius, with outriggers set in place, the crane can lift 60,000 lb using a 30-ft boom. The same length boom, working in a 10-ft radius, with outriggers folded against the crawlers, can lift and carry 47,980 lb. *Koehring Div., Koehring Co., Dept. RA, 3026 West Concordia Ave., Milwaukee 16, Wis.*



◀ Rail Straightening Press

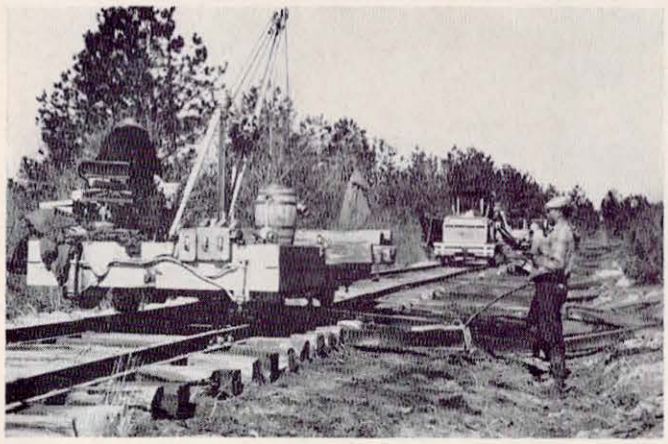
Bent rails can be straightened, it is claimed, by the use of a new hydraulic Rail Straightening Press. The machine is designed to automatically detect, locate and straighten bends up to 8 ft in radius as the rail moves through the press on a conveyor system. Bends of longer radius can be straightened by the addition of an outboard sensing device. *Hydraulic Manufacturing Company, Dept. RA, Mount Gilead, Ohio.*

Data Processing System

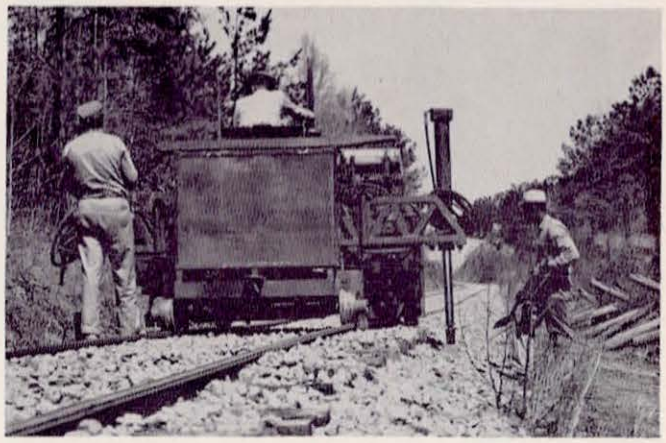
The 7080 solid-state data processing system offers instruction compatibility with existing 705 systems. Internal processing speeds in the 7080 are six times as fast as those of the 705 III and ten times as fast as those of the 705 I or II. As many as five input-output tape operations can be overlapped with processing. The 7080 overlaps transmission with processing and tape reading or writing. *IBM Processing Div., Dept. RA, 112 East Post Rd., White Plains, N.Y.*

1 **TWO-WHEEL KRIBBERS** remove as much old ballast from the cribs as possible. Track Broom then cleans sand, weeds from ties.

2 **TRACK IS RAISED** to allow old ties to be knocked down and removed. Machine being used here is a Kershaw Track Jack.



5 **NEW TIES** are pulled into track by Kershaw Track Crane with tie inserter. Laborers then insert tie plates, gage track and drive spikes.



6 **NEW BALLAST** is distributed, then track is raised by Kershaw Tamping Jack, which tamps one tie in each quarter to hold the raise.

Georgia & Florida Pushes

BY STEWART B. AUSTIN
Chief Engineer, Georgia & Florida

The Story at a Glance: By the fall of 1961 the Georgia & Florida, a 320-mile line, hopes to wind up a track-rehabilitation program involving 182 miles of main track. It's financing the project with a $1 million loan approved by the ICC under the Transportation Act of 1958. The work, which includes reballasting with crushed rock and heavy tie renewals, got under way in March and is being done by a newly organized, highly mechanized gang.

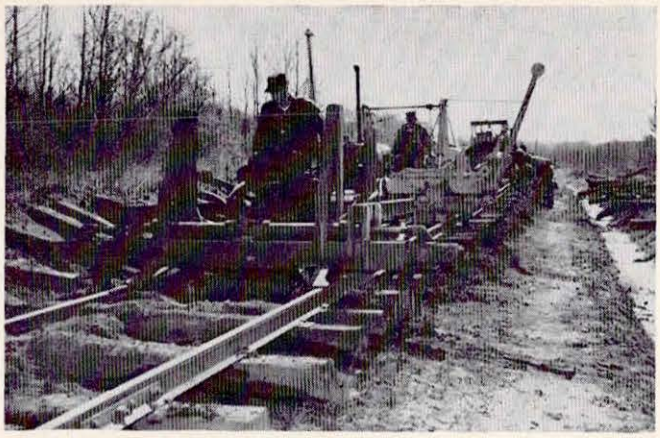
The rehabilitation of railroad track with borrowed funds is a rarity. But, to do such work with the proceeds of a loan guaranteed by the federal government is unprecedented in the U.S.A.

Such a precedent has been established on the Georgia & Florida. A $1 million loan (RA, Oct. 12, 1959, p. 7), approved by the Interstate Commerce Commission under provisions of the Transportation Act of 1958, and guaranteed by the federal government, is being used in carrying out a program in which about 182 miles of the road's 320 miles of main track are being rehabilitated. The financing was done by the First National Bank of Atlanta, Ga., under a procedure outlined by the ICC.

This loan, the first of its type, is in addition to a similar loan of approximately $1 million (RA, May 18, 1959, p. 7) granted the road in 1959 for the purchase of one hundred 50-ft box cars which were delivered in the fall of last year.

Work on the main tracks, using the loan funds, got under way in March this year. In making application for this loan the road stipulated that the funds derived would be used for the purchase of treated hardwood track ties, tie plates, other track materials, crushed rock ballast and track-maintenance machines. No rail laying is contemplated under the present program. Proceeds of the loan will be more than matched by funds provided by the road for labor and other materials and supplies. In addition to the track work, it is planned, using funds from other sources, to improve trestles and buildings and to carry out other improvement work. The road will also use its own funds to complete the rehabilitation of trackage not included in the present program.

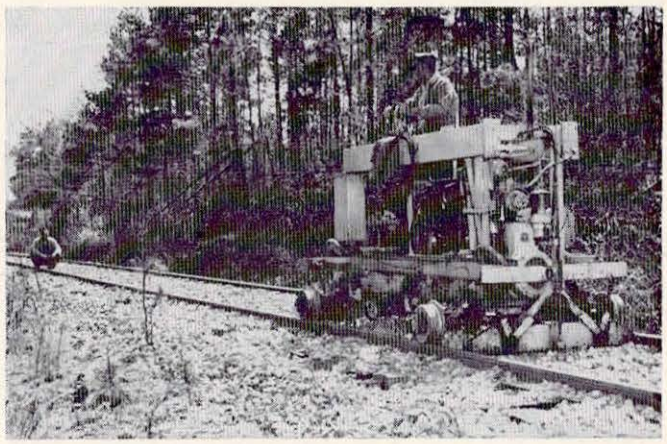
The G&F extends from Valdosta in



3 **REMAINING SAND** in tie cribs is removed by two Tie-Bed Cleaners. Laborers then use shovels to clean track of all sand and grass.

4 **SHOULDERS** of skeletonized track are smoothed and shaped by Ballast Regulator. Note new ties at left ready for insertion.

7 **TAMPING** is done with two Jackson Multiple Tampers working in tandem. Track Jacks are used ahead of tampers to correct small irregularities.



8 **LINING** is done with Nordberg Trakliner. Regular section forces dispose of old ties, apply anti-creepers, and then clean up track.

Its 182-Mile Track Program

southern Georgia in a northerly direction to Greenwood, S. C., with branches to Adel, Ga., and Moultrie. It has been in receivership since 1929. Present receiver is Alfred W. Jones.

Prior to approving the track-rehabilitation and car-purchase loans the ICC made a thorough study of the G&F to determine the need for the loans, the use of the funds and the ability to repay. Studies were made of the road's personnel, its labor relations, its patrons, both on and off line, present and potential industrial locations and general prospects.

Inspection parties, composed of officers of the road and representatives of the ICC, examined all main tracks, trestles and structures. The proposed rehabilitation program was carefully examined and evaluated. The fact that the loans were granted after such a careful investigation is considered a vote of confidence in the road.

As early as 1955 the G&F had taken steps to place its track in such shape as to make mechanized maintenance possible. Because these tracks had been maintained on ballast consisting of sand or native soil they were not capable, under increased tonnages and wheel loads, of providing the stability and economy of maintenance required today. A program was undertaken, therefore, to reballast the main tracks with crushed rock ballast and to do needed retimbering and tie-plating. Since few machines were available that could remove sand ballast the road collaborated with the Kershaw Manufacturing Company in devising a system whereby several of that company's machines were modified to meet the road's track-reworking demands.

With the track program under way in 1955 and 1956, about 90 miles of main tracks were ballasted, timbered and reworked During the next two years, however, due to conditions common to all roads, the program had to be retarded. Because of extremely wet periods the road went into 1959 suffering from slow train schedules made necessary because of rough track at locations where rock ballast had not been placed. The decision having been made to seek approval of a loan under the Transportation Act, the track program was further retarded pending receipt of the loan funds. Goal: 182 Miles by Next Year.

On being notified the loan would be granted steps were taken to provide the necessary materials and the additional machines and equipment needed to increase the work force. By March

a gang to carry out the track rehabilitation work had been organized and its machinery had been brought up to date by additional purchases. The goal is to rehabilitate the 182 miles of main track by the last quarter of 1961.

Ahead of the track gang the roadbed is drained by the use of a Jordan Spreader and cuts are set back and fills flushed by a work train using dump cars. Section forces then distribute new ties and tie plates, remove anti-creepers and do other work.

The mechanized gang then moves in to rehabilitate the track. This gang removes all sand ballast, installs new ties as needed, places tie plates, gages the track, places the rock ballast, and surfaces the lines and rebuilt track. Roster of the gang consists of 15 machine operators, foremen and assistants and 28 laborers and cooks. The outfit is in charge of a supervisor of track—mechanized gangs. One or two roadway mechanics, equipped with shop trucks, are assigned to the maintenance of the machines used by the gang.

Here's how the work is done:

First, a portion of the sand is removed from between the ties by Kershaw Two-Wheel Kribbers, followed by a Kershaw Track Broom sweeping sand and grass from the tops of the ties. Next a Kershaw Track Jack is used to raise the track a sufficient amount to allow laborers to remove ties, using spike bars to knock them loose from the rails. In the same operation the track is raised 2 to 4 in., after which two Kershaw Tie-Bed Cleaners complete the work of removing the sand from the cribs. Following behind this operation a Ballast Regulator smooths the sand removed from the track and improves roadbed drainage.

Final cleaning of the track is done by four laborers using shovels. This is followed by the retimbering operation in which a Kershaw Track Crane with tie inserter installs new ties at the rate of 700 to 1,500 per mile. Laborers then insert tie plates, gage the track and set spikes which are driven by I-R pneumatic spiking hammers.

Ballast Distribution

Crushed rock ballast is distributed by work train at the rate of 1,500 tons or more per mile. The track is raised on the new ballast by a Kershaw Tamping Jack and the ties are tamped by two Jackson Multiple Tampers. The ballast is regulated before and after surfacing by a Ballast Regulator and the track is then swept by a Track Broom. Lining is done with a Nordberg Trakliner. Follow-up work, such as disposing of old ties, bolt tightening, installing rail anchors and general cleaning up, is by section forces.

The Ballast Regulators in both the stripping and timbering gang and in the surfacing gang are equipped with Motorola two-way radios and the gang foremen have been provided with handy-talkie units. The purpose is to eliminate delays to trains, which are also equipped with radios, and to increase the efficiency of the gangs.

When the track-rehabilitation program has been completed the plan is to create, from the present organization and equipment, two timbering and surfacing gangs which will perform our future heavy-maintenance work on a cycle basis.

The G&F maintains a fast through route between northern points and various points in Georgia, South Carolina and Florida. With its track rehabilitation program under way, and with other impressive improvements being made in the physical properties, it is anticipated on the G&F that the road will soon be in a better position to attract new business and new industries.

The G&F: A Long Struggle for Survival

The Georgia & Florida's track-rehabilitation program, using a government-guaranteed loan, marks another milestone in the turbulent—and frequently precarious—history of this southeastern line. Following a shaky beginning in 1908, the road gained ground after World War I, but was so badly damaged by floods in 1929 that it was forced into receivership, a state of affairs that has continued ever since. It managed to survive the depression and gained strength prior to World War II, but was in serious difficulties again in 1948 because of increasing labor and material costs. These difficulties were complicated by labor problems that resulted in several strikes.

To help the road out of its difficulties, the receiver, Alfred W. Jones, retained Wm. Wyer & Company as consultant. The result was a recommended course of action that included a plan for improving labor-management relations. In return for a ten-year no-strike agreement, labor was granted a profit-sharing contract.

With labor peace assured, the road embarked on an improvement program that included dieselization (completed in 1950), the abandonment of branch lines, and a property-rebuilding program with emphasis on bridges and trestles which had accumulated a great deal of deferred maintenance.

Following his appointment, in March 1954, as chief operating officer, J. P. Belvin, now chief executive officer, instituted many changes in operating procedures. A team of department heads was formed which holds regular conferences. Budget matters are given top attention and means of achieving more efficient operating results are continually sought.

Many improvements have been made, especially during the period 1957-59. The obsolete telegraph and telephone system was replaced by a Teletype system leased from Southern Bell Telephone & Telegraph Co. All train dispatching and wire communications are now handled by Teletype. In addition, Motorola two-way radio base stations have been installed at all principal points and all locomotives and cabooses are radio equipped. All trains and mobile radio units are within reach of a base radio station and connected by Teletype to the general and dispatching offices.

IBM machines are performing major accounting functions for the car and accounting departments, as well as various classes of work for other departments.

Crossing signals and gates are being installed where required at highway crossings. A program looking to the elimination of non-productive tracks has resulted in reduced maintenance costs, while at the same time additional yard and passing tracks have been constructed.

The road's car fleet has been increased through the acquisition of 150 wood racks in 1954, a number of covered and open-top hoppers and specialized equipment, in addition to the 100 box cars obtained in 1959 under the Transportation Act loan.

Its fleet of diesels has been increased and existing diesels are being brought up to date through unit exchange of motors and other work. The last payment on the diesels will be made this year.

In view of all these improvements, and with the tracks now being upgraded on an extensive scale, officers of the G&F see better times ahead for their road.

What Shippers Like in Freight Containers

Shippers seem to be showing increasing interest in freight containers looking like, and about the size of, conventional highway truck-trailers.

That, at least, is one of the conclusions drawn from a recent survey of important shippers in the Cleveland area. The survey, limited in scope, but intensive in detail, was conducted by A. W. Todd, former traffic manager and now director of purchase engineering, of Lincoln Electric Co.

"There seems," Mr. Todd says, "to be an almost unconscious shipper drive" toward truck-body size containers—probably of the recommended standard dimensions of 40 ft by 8 ft by 8 ft. This, he believes, "will capitalize pro-truck on every improvement made by motor carriers in this direction, and magnify every error made by railroads."

Development of containers for joint benefit of shippers and railroads, Mr. Todd concludes, "will require intensive cooperative work, and presupposes that rules, traditions and other old constrictions will be removed."

Other conclusions from the survey:

- There is virtually no shipper interest in small containers for LCL.
- There is some shipper interest in medium-size containers, holding up to 10,000 lb, and loading from four to 10 on a flat or gondola car. Such interest might be stimulated if containers of that type, suited to particular movements, could be operated as a pool.
- There is also some shipper interest in development of small freight cars, something like those used in Europe, but no sentiment for cars larger than those now in use in this country.

Railroading After Hours with Jim Lyne

RETIREMENT OCCUPATION—Some railroaders when they retire go fishing. Some go into the supply business. The late George Randall, retired car service officer and port director for the AAR, took on an editorial assignment—that of running the "Questions & Answers" department of Railway Age. Working with our editors, George developed a service which attracted a lot of participation from interested readers. He kept at it until only a few months ago when the state of his health made him lay off.

Some fellows quickly fade out, from boredom, when they are put out to grass—but not a man with imagination. Even if a fellow has no hobbies and knows or cares about nothing but railroading—there are still plenty of facets of this business which can stand a lot of skilled attention. George found one uncultivated field worth plowing into. There are many others.

TRANSIT SAFETY—Riding a transit line is a lot safer than driving to work. Nevertheless transit systems are always getting kicked around—and in New York there's been complaint about both safety and on-time performance. So an engineering firm was hired to examine the property and reveal what it found. As to safety, the engineers reported the system's record "unexcelled." Most transit riders who get killed are those who fall or jump in front of trains.

As for reliability of service, the principal cause of trouble was found to be the age of cars, and the record is worse for the division having the highest ratio of old cars. On one of the divisions 64% of the cars are over 35 years old and, on another, 42%.

People are used to paying for unlimited amounts of highway transportation with their taxes and they're not used to paying for transit, in part, in the same way. It's the competition from heavily subsidized motor traffic that has caused all the trouble for the transit lines, which are indispensable to big cities' very existence.

RAILROADS AS PRODUCERS OF ELECTRICITY—Railroads have 40 million kilowatts of electric generating capacity, represented by their fleet of diesel-electric locomotives. This compares with 150 million kilowatts of installed capacity by the great and growing electric utility industry. In other words, railroads are better than one-fourth as big in the business of producing electrical energy as the utilities are.

My source for this information is P&LE's president John Barriger—who has been digging into the potentialities of railroad electrification. These he believes will be considerable, once the railroads are given conditions under which they can have reasonable assurance of traffic growth.

COPY PRESSES AS SAFES—Reader W. S. Wicker says—of those old-time copybook presses that used to adorn every railroad office and station—that they served in a way as fireproof safes. That is, if the press were screwed down tight, a fire might char the edges a little, but the middle part of the copies would remain intact.

Mr. Wicker reports that he's seen three of these presses relatively recently—one of them in the Rock Island's ticket office at Cedar Rapids; another at the Tallulah Falls Railway, Tallulah Falls, Ga.; and another in some premises at a Boston warehouse, leased out by the Boston & Maine.

COMMISSION ON TICKETS—I have a letter from a traffic vice-president, strongly favoring the payment of 5% commissions on tickets sold by travel agencies. He brings me up-to-date by advising that 15 or more railroads, by independent action, are now paying these commissions on straight travel. However, some af these lines (he goes on to say) pay commissions only in towns served by airlines—and surround the payments with other restrictions.

Lack of uniformity in application of such commissions, and in acceptability of credit cards, certainly must cut down a lot on their usefulness. I can understand why a road with very little passenger business might not want to go to all the bother to make arrangements with outsiders—but I'd suppose the heavily traveled routes might find it easier to get together, either pro or con. I've observed that patrons of air lines seem to use air travel credit cards quite widely—one reason being that practically all airlines accept them.

Electrification: France Shows

► **The Story at a Glance: Electrification, says Pittsburgh & Lake Erie President John W. Barriger, can play the same spectacular role between 1965 and 1980 that dieselization did between 1945 and 1960—if changes in national transportation policy allow privately owned railroads to again become a growing industry. Mr. Barriger's thesis—that government restrictions, not technical limitations, have so far prevented large-scale electrification in the U. S.—is supported by what has happened in France, where electrified lines now produce half of all freight ton-miles and passenger miles.**

"It seems again appropriate to talk about super power for super railroads," P&LE President Barriger told the fourth annual Railroad Conference, sponsored jointly by the American Institute of Electrical Engineers and the American Society of Mechanical Engineers in Pittsburgh April 20.

"Super power means 10,000 to 15,000 hp electric locomotives using central station power. Super railroads denote intensively improved and developed main lines of great regional or even transcontinental systems . . . Super power symbolizes the locomotive capacity necessary to make the next breakthrough to operating standards that are appreciably above the best presently attainable ones.

"Machines of this great output will exceed the rational limitations of portable generating plants. The traffic densities essential to support the scale of operations related to locomotives of such capacity will inherently provide the economic characteristics essential to support electric power distribution systems

"Use of 25,000 or 30,000 volt, 60-cycle power with modern means of current rectification and the present d-c traction motor will provide the technical foundation of widespread future economical railway electrification. Daily operations of American railroads now require a fleet of nearly 30,000 diesel locomotives containing portable power plants having an installed capacity equal to over one-fourth of that of all of the nation's central power stations. The intermittent and average less-than-capacity use made of this impressive total of mobile power plants produces a low 'power factor' for each locomotive unit and the total group . . . Not all locomotives are working at any one time, and not all those which are running are utilizing their full rated capacity continuously. Railroads with electrified lines find that the maximum power consumption seldom exceeds 20% to 25% of the equivalent capacity of the entire locomotive ownership.

"Electric power cannot be easily or economically stored in large amounts and it cannot be generated in small quantities at low unit cost. The difference in the cost of electric power generated on the locomotive compared with that made in a large stationary plant [4 to 10 cents per kwh on locomotives vs 2 mills per kwh for high-capacity stationary stations, according to Mr. Barriger] when related to the annual power requirement of super-railroads will represent an amount sufficient to pay interest, depreciation and maintenance of the distributing system for maximum density lines, and leave a balance sufficient to represent an adequate return on investment.

"Use of 25,000 volt or 30,000 volt distribution systems permits installation of a much lighter and less expensive catenary system than was formerly the case. The former $50,000 per-track-mile cost has come down to about $20,000 per mile. Present unit cost per horsepower of all-electric locomotives will average about 75% of that of diesel locomotives, and might be reduced to about two-thirds with volume production."

When will this breakthrough to super power come? Said Mr. Barriger: "One can predict with certainty that if the railroads are permitted under private ownership to return to their rightful place in the national economy, obtaining the traffic growth and earning power necessary to support the continued rapid integration of technological progress into their properties and equipment, electrification of the primary main lines of consolidated railway systems will follow."

French Progress

Further evidence that government restrictions and not technical limitations block present U.S. electrification was presented by Fernand Nouvion, director of electrical traction research for the French National Railways, who described the progress of industrial-frequency railroad electrification in France. M. Nouvion told how the 2,200 route miles of electrification in France in 1945 has now been expanded to 4,000 route miles, with an additional 700 miles scheduled to be under catenary by 1963.

Presently these electrified lines produce half of all the freight ton-miles and passenger miles, and this proportion will become 63% by 1963. Between 1949 and 1958, railroad employment in France dropped from 465,000 to 360,000 while traffic increased from 70 billion to 85 billion "traffic units." Electric traction, said M. Nouvion, has played a major role in this increased efficiency.

Main lines are being electrified and branch lines are being dieselized. On a double-track line, an annual diesel locomotive fuel consumption in excess

ELECTRIFICATION PATTERN has been established in France. This BB 16000 ignitron-rectifier passenger locomotive on the French National Railways is rated at 4,920 hp, weighs 185,000 lb, and has top speed of 100 mph.

the Way

of 26,600 gal. per route mile would be necessary to justify electrification. For a single-track line, the figure is 16,900 gal. per route mile.

All major electrifications now planned in France will be with 25,000 volt, single-phase alternating current distribution.

An important phase in the development of successful electric locomotives in France has been work on improving their adhesion characteristics. While most of the units now on order will have four-wheel trucks, each truck will have only one motor and the two axles will be coupled. Coupling of axles does improve adhesion. Locomotives are being wired with motors in parallel to avoid the "slipperiness" associated with series connected motors. Two approaches are being taken to rail cleaning. One is a form of mechanical cleaning and the other would be a system of "sparking" in which a high voltage discharge to the rail just ahead of the wheel would remove contaminants.

Slip-Correcting Brake

J. C. Aydelott, General Electric, told of experiments conducted on the Erie Railroad with two 2,500-hp General Electric diesel road switchers equipped with slip-suppressing brake. Although these units have only four axles, latest wheel slip detection and control equipment has made their operation successful.

"The belief has sprung up that slipping would limit the usefulness of a high-horsepower diesel-electric locomotive," Mr. Aydelott said.

Findings of the GE research program show that "low adhesion occurs intermittently, and there are stretches of good adhesion interspersed between the slippery spots; good slip detection and correction enable a locomotive to make use of prevailing stretches of good adhesion and effectively develop high horsepower per driving axle to move trains economically. . ."

A slip-correcting brake was used in these tests. This system employs an automatic light, quick application of the regular brakes on the locomotive unit on which the slip occurs. While brakes are applied to all wheels, the effect is slight on wheels which are not slipping and the action takes maximum power from the slipping axle to decelerate it. The brake application also removes slippery film from the wheels and prepares them to engage the good rail when it is available.

Editors Afield

CHICAGO

One railroad is operating a locomotive and side dump cars by remote control. But no one will talk about it for publication. Everyone (officially) denies its existence. Why the news blackout? Labor relations, say those in the know. This is an important step toward automation, and I'm sure the brotherhoods know about it.

Planning today for tomorrow, Santa Fe is installing extensive microwave systems for through communications. Pole lines will be maintained for signal circuits, namely CTC, and local message lines. Top management concurs with financial support for extending microwave to cover all mainlines.

Speaking of microwave, don't expect to use it for television. TV just takes too much bandwidth. Might be OK for coast-to-coast commercial use, but those in the know say microwave transmission of TV isn't economical. Similarly, some thinking is that TV for railroads does not replace the yardmaster and his tower. Most yardmasters want to be up in the air and have those binoculars for looking around. Economically TV doesn't pan out for yard surveillance, say my informants.

Hot box detectors are again in the news. General Railway Signal has just entered the field (*see page 15*) and the word here is that Union Switch & Signal will have a detector out next month. That brings the score to five: pioneer was Servo Corp. of America, then came General Electric and Link Aviation last fall.

Time-saver: Rock Island is using an ultrasonic (high frequency sound waves) unit to clean six teleprinters per day compared to one per day using the former hand methods.

Robert W. McKnight

Whitman Advises 'Hard Sell'

Railroad industrial and agricultural development officers "are bringing more traffic to the railroads than ever before," says Western Pacific President F. B. Whitman.

"Railroad managers are becoming increasingly aware of the good work you are doing" and are "placing greater emphasis on your responsibilities," Mr. Whitman told members of the American Railway Development Association at their 51st annual convention in New Orleans, April 24-27.

He went on to say that "there are many opportunities for further progress" to which development officers can contribute by:

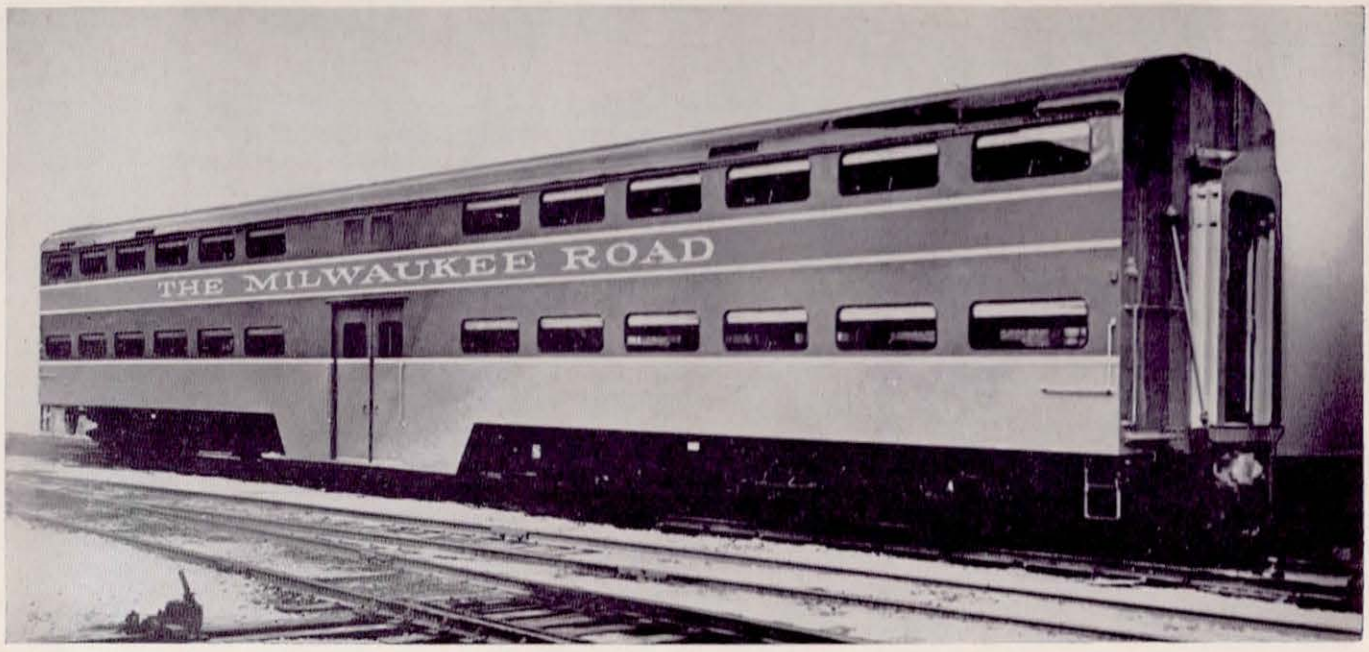
- "Hard selling" for the railroads, so other industries will locate on railroad lines—not "some distance away."
- Using "resourcefulness and ingenuity" to keep down costs and at the same time have property available to meet demands of industry.
- Careful analysis of problems, so as to forestall emergencies—"not just meet them after they develop."
- Long-range planning; "even if it results in some mistakes, planning on the basis of an educated guess is better than no planning at all."

Each of these points represents application to development work of one of Mr. Whitman's "philosophies of management," which he outlined with the optimistic undertone of his feeling that "future opportunities for success of the railroads appear more favorable than . . . in the last 30 years."

As the basis for this optimism, he predicted railroads would get "a bigger share of a larger total of traffic" because of:

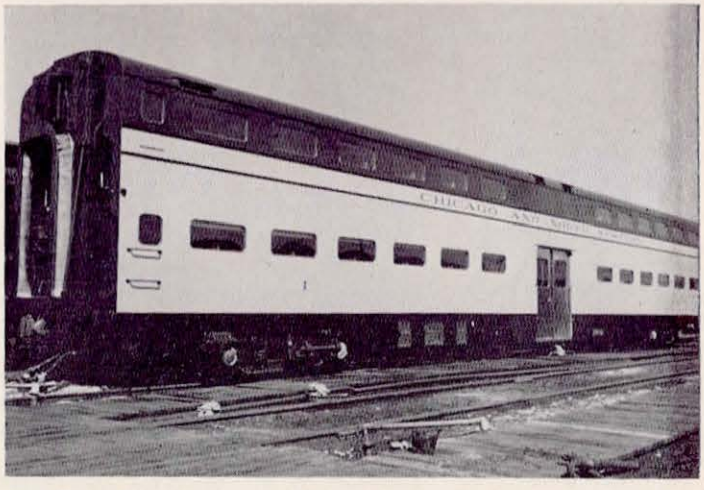
- "The forward-looking attitude of modern-day railroad managers."
- Growth of population and of gross national product.
- "Saturation" of highways and airways.
- The Transportation Act of 1958 and this year's Department of Commerce report on transportation.
- The "more aggressive attitude" aimed at better marketing and more skilful selling and pricing.

J. W. Ewalt, assistant to vice president—real estate, of the Pennsylvania, was elected president of ARDA, to succeed F. B. Stratton, director of industrial development and real estate of the WP. Other new officers are: First vice president—L. B. Horton, commissioner, agricultural and mineral development department, Chicago, Milwaukee, St. Paul & Pacific; second vice president—K. C. Lewis, manager, real estate and industrial development, Delaware & Hudson; and secretary-treasurer—F. V. Fisher, land and tax agent, Elgin, Joliet & Eastern.



MILWAUKEE'S DOUBLE-DECKERS will look something like this. Present plans don't call for use of push-pull equipment such as C&NW has adopted.

$35,000,000—And All for Commuters



C&NW, well on its way to full modernization of equipment, has 84 double-deck cars with another 116 on order. All are, or will be, push-pull design.

Commuting may never become an absolute joy for either commuter or railroad—but Chicago's suburban roads seem determined to make the business as palatable as possible for all concerned.

Investment in new equipment alone over the next few years may total $35,000,000 or more.

- Chicago & North Western, biggest commuter carrier, is spending $21,000,000 for 116 new bi-level push-pull cab cars and trailers to modernize its operation completely by late 1961.
- The Milwaukee Road is projecting a three-year program to replace all conventional equipment with 75 double-deck cars at a cost of $13,125,000.
- Burlington, owner of 60 two-level coaches (as well as 88 conventional cars, all air-conditioned), can be expected to add to its fleet of bi-levels as demand for service increases.

Milwaukee, newest entry in the suburban upgrading field, is tying its modernization to proposals to boost fares (by an average 25-30%) and to institute a flash ticket system similar to that adopted by C&NW in its full-scale revision of suburban passenger operations.

Under existing circumstances—Milwaukee lost $1,800,000 on commuter service last year—the road can find no justification for heavy investment in new suburban equipment. But, if it can increase fares to levels "necessary to support such a program," it will move immediately to order the first 25 double-deckers. The remaining 50 cars would be ordered according to the modernization schedule, revenues permitting.

Actually, even with a 25% increase in fares, Milwaukee commuters will be paying little more than commuters on other Chicago roads. For a round-trip commute of 34 miles, for example, IC commuters now pay $19.87 for a 46-ride monthly ticket, $22.08 for a 54-ride monthly; C&NW riders pay $22.63 for an unlimited monthly flash-type ticket. Over the same distance, Milwaukee commuters now pay $18.75 for a 46-ride. Applying a 25% increase brings the cost to $23.19.

A petition for authority to impose a new suburban fare structure was to be filed with the Illinois Commerce Commission last week.

RRs Fight Unemployment Waste

Deficit financing has come to railroad unemployment insurance in a big way. The unemployment tax rate —levied solely against employers—has risen steadily since 1955. It now stands at 3¾%—and outgo is still outrunning income. The unemployment account today is "solvent" only because of transfers totaling $109,600,000 (as of April 20) from the railroad retirement account.

Much responsibility for the situation lies with a Congress prone to liberalize benefits and reluctant to tighten the restrictions on claims. Without legislative relief, management may be fighting a futile battle to cut unemployment costs significantly—but employment officers can still point to several ways in which the blow can be softened. Their objectives:

- To schedule work to keep men employed, without paying surplus employees.
- To get men back to work quickly after temporary furlough.
- To cooperate with the Railroad Retirement Board in policing the unemployment benefit system—and to make sure benefits are paid only to those entitled to them.

A number of roads have moved ahead, both individually and in close cooperation with the RRB, in an attempt to conserve unemployment insurance account funds.

Companies such as the Rock Island, Grand Trunk Western, Chesapeake & Ohio, and the Santa Fe, are credited with maximum effort toward cutting the number of unemployed by hiring experienced people off the benefit rolls.

Some roads have made notable progress toward spreading work over longer periods of time or broadening the capabilities of workers. Among them, for example, are the Boston & Maine and its all-year M/W crew (RA, Feb. 16, 1959, p. 22), and the Rock Island and its composite B&B-water service gangs (RA, Nov. 28, 1955, p. 28).

Managements in some areas are tending to relax hiring standards for new men when experienced people are available. The RRB reports an increasing number of orders showing higher age limits for men with experience than for those without. That can make a significant dent in benefit rolls, because many unemployed are in higher age brackets.

On many roads there's been a tightening of the checks on claimants. The story about the Chicago & Eastern Illinois engineer who qualified for $40.80 unemployment benefits while he earned $850 during a 30-day period (RA, Nov. 9, 1959, p. 15), touched off a flurry of circulars calling for strict adherence to the rules on information required of train and engine service claimants.

Closer supervision of the system can pay big dividends fast. On one road, a survey of claims paid T&E employees showed that 6% of the amount paid before checks were instituted shouldn't have been paid. After closer supervision was begun, the percentage dropped to a mere two-tenths of one per cent.

All such moves can be significant contributions. Personnel officers point out ruefully, however, that there's no reward for the individual road's efforts. It has to be a team drive. "One road that's very careless can offset all the effort that others may be making."

Grand Trunk, over the past year and a half, has provided a good example of that team effort. Its system revolves around the employment office in Detroit. All layoffs must be reported there, no new hires may be made without a check there first. Among the results of the program:

- Notable successes in placing men across craft lines. Furloughed firemen and even a few shop employees have been placed as switchmen. In some cases, men have also changed work location—laid-off brakemen at Detroit, for example, were placed as switchmen at Flint. Housing arrangements in such transfers can be a problem, but not an insoluble one. In one instance, a group of switchmen rented an apartment and shared expenses. In another, GTW provided a caboose for temporary living quarters.
- Close cooperation between companies in the Detroit area. Carmen cut by GTW were placed with NYC because the employment offices of the roads maintain contact.
- Pre-layoff placement efforts. When the road was preparing to close a shop facility, teams of men were sent into the area to work on placement in advance of furloughs.

The fight to cut unemployment costs is a business where discouragement comes easily. But, forward-looking personnel officers shrug off the setbacks and keep plugging.

How Unemployment Costs Can Skyrocket

Suppose nine employees are used on a given job at a wage rate of $2.13 per hour. Each man earns the minimum qualifying wage credits of $500. Total wages would be $4,500.

If each man had 15 years' railroad service, then each, if and when furloughed, could get $500 in normal unemployment benefits and $1,326 in extended benefits. The total, for nine men, would be $16,434.

Total cost of the work in this admittedly extreme example is $4,500 for wages and $16,434 in accrued unemployment benefit liability, or a total $20,934. The base wage rate of $2.13 per hour has been considerably inflated by accrued benefit liability. Including maximum possible sickness benefits in the total would boost the overall cost potential and the wage rate still higher.

Now assume that one man instead of nine is used to do the job—perhaps by scheduling the job over a longer period. One man would have the same qualifying wage credits: $4,500.

If the one employee had 15 years' railroad service and was furloughed, he could get $1,326 in normal unemployment benefits and $1,326 in extended benefits, for a total of $2,652.

Total cost of the work, done by one man instead of nine, would be $4,500 for wages and $2,652 in accrued unemployment benefit liability—a grand total of $7,152. Cost, including accrued benefit liability, is cut by almost two-thirds by use of minimum personnel. An extreme example? To be sure. But similar situations do arise—for example, the case of the road that employed a young woman as an extra clerk, June 1956 to July 1959. Her wages: $4,976. Her sickness, maternity and unemployment payments: $5,542. In effect, she was paid double time for all work performed.

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures Total 1960	Total 1959	Deprec and Retirements	Maint. Equipment Total 1960	Total 1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	Total 1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Akron, Canton & Youngstown	Feb.	171	488	....	497	477	62	59	6	80	66	15	44	151	383	364	77.0	76.3	114	73	37	37
	2 mos.	171	965	....	985	923	116	122	11	156	128	31	88	305	757	724	76.8	78.5	228	138	72	59
Alabama, Tenn. & Northern	Feb.	214	286	....	288	292	53	50	5	12	5	6	4	77	149	144	51.7	49.1	139	46	31	32
	2 mos.	214	546	....	551	565	105	100	11	22	16	11	9	160	303	290	55.0	51.9	248	71	53	57
Atchison, Topeka & Santa Fe	Feb.	12,970	40,911	2,483	47,718	45,447	5,898	5,754	718	10,448	10,470	2,442	1,323	17,621	37,479	36,451	78.5	80.2	10,239	6,870	3,137	3,244
	2 mos.	12,970	80,240	5,609	94,744	93,299	11,362	11,772	1,453	20,702	20,589	4,889	2,672	35,847	75,136	74,055	79.3	79.4	19,609	12,860	5,910	6,596
Atlanta & St. Andrews Bay	Feb.	81	310	....	317	299	34	38	4	27	32	8	7	74	165	169	52.1	56.6	152	70	44	41
	2 mos.	81	632	....	643	622	69	78	7	54	63	16	14	150	333	347	51.7	55.8	311	141	95	91
Atlanta & West Point	Feb.	93	238	20	306	274	42	41	8	55	47	14	18	129	265	253	86.7	92.3	41	18	—2	—26
	2 mos.	93	467	45	608	578	77	77	15	103	98	28	36	260	519	516	85.5	89.2	88	36	10	—31
Western of Alabama	Feb.	133	281	18	334	316	46	44	9	67	54	19	22	137	294	268	88.1	84.8	40	33	5	11
	2 mos.	133	558	42	669	661	100	89	18	124	116	38	42	282	592	563	88.5	85.2	77	69	13	22
Atlantic Coast Line	Feb.	5,573	11,755	1,662	14,502	13,358	2,008	1,764	172	2,489	2,451	628	478	5,488	11,277	10,658	77.8	79.8	3,224	1,450	1,065	694
	2 mos.	5,573	23,365	3,313	28,793	27,431	3,991	3,634	352	4,854	5,009	1,307	997	11,169	22,670	22,076	78.7	80.5	6,123	2,975	1,680	1,325
Charleston & Western Carolina	Feb.	Merged with Atlantic Coast Line effective January 1, 1960																				
	2 mos.																					
Baltimore & Ohio	Feb.	5,910	27,363	1,126	31,082	29,364	5,345	5,081	514	6,639	5,087	1,064	962	14,295	27,078	23,922	87.1	81.5	4,004	2,523	—288	1,966
	2 mos.	5,911	58,114	2,425	65,637	59,444	6,745	6,659	1,022	13,790	11,357	2,170	1,869	28,924	55,128	50,518	84.0	85.0	10,509	5,029	1,694	1,591
Staten Island Rap. Trans.	Feb.	29	155	87	250	259	55	48	12	49	35	2	2	150	289	269	115.3	103.7	—38	50	—104	—78
	2 mos.	29	324	176	516	552	115	110	21	95	78	4	4	300	579	575	112.3	104.1	—63	98	—199	—164
Bangor & Aroostook	Feb.	602	1,451	21	1,515	1,395	380	354	20	276	290	110	35	429	1,196	1,131	79.0	81.1	318	99	189	186
	2 mos.	602	2,891	42	3,014	2,903	766	735	39	538	567	220	67	872	2,398	2,376	79.6	81.8	616	190	415	395
Bessemer & Lake Erie	Feb.	203	1,554	....	1,593	981	249	208	26	574	659	141	53	456	1,495	1,456	93.8	148.3	98	295	145	—57
	2 mos.	203	2,986	....	3,128	1,904	428	448	50	1,102	1,084	283	85	876	2,809	2,693	89.8	141.5	320	725	370	49
Boston & Maine	Feb.	1,557	4,681	489	5,565	5,653	700	799	143	850	918	251	163	2,510	4,593	5,067	82.5	89.6	972	455	—9	—451
	2 mos.	1,557	9,681	998	11,526	12,013	1,332	1,625	286	1,697	1,811	502	315	5,070	9,133	10,289	79.2	85.6	2,393	904	414	—352
C. P. R. in Maine	Feb.	234	1,114	37	1,185	968	99	110	20	128	141	17	20	254	536	531	45.2	54.8	649	37	511	310
	2 mos.	234	2,047	99	2,204	1,930	183	249	41	266	284	34	44	497	1,051	1,088	47.7	56.4	1,153	71	855	550
Carolina& Northwestern	Feb.	284	268	....	272	278	27	40	7	26	32	21	5	74	147	165	53.9	59.3	126	24	60	34
	2 mos.	284	552	....	561	561	58	76	14	54	63	42	11	163	313	330	55.8	58.9	248	44	95	72
Central of Georgia	Feb.	1,745	3,156	131	3,479	3,394	541	541	42	700	693	185	175	1,418	3,031	2,976	87.1	87.7	449	278	164	159
	2 mos.	1,745	6,407	265	7,038	6,997	1,111	1,120	83	1,439	1,383	378	349	2,871	6,161	6,144	87.5	87.8	877	560	323	346
Central of New Jersey	Feb.	594	3,367	459	4,140	3,770	502	490	96	729	785	132	86	2,102	3,663	3,609	88.5	95.7	477	487	—344	—390
	2 mos.	595	6,864	925	8,415	8,053	974	977	195	1,454	1,694	266	162	4,298	7,395	7,589	87.9	94.2	1,020	982	—654	—759
Central Vermont	Feb.	375	649	56	768	767	139	155	17	116	108	9	19	323	639	657	83.2	85.7	129	55	—11	—64
	2 mos.	375	1,350	119	1,607	1,596	252	276	35	227	224	19	37	659	1,257	1,338	78.2	83.8	350	111	39	—98
Chesapeake & Ohio	Feb.	5,122	24,795	434	26,256	26,589	3,200	2,850	467	5,090	4,794	1,901	868	10,113	20,804	20,311	79.2	76.4	5,452	2,410	3,316	4,202
	2 mos.	5,122	52,161	860	55,213	55,488	6,500	5,810	912	10,541	9,870	3,795	1,719	20,646	42,468	41,833	76.9	75.4	12,745	5,943	7,364	8,641
Chicago & Eastern Illinois	Feb.	862	2,337	138	2,729	2,898	362	335	31	497	454	183	140	1,168	2,338	2,251	85.7	77.7	391	226	79	215
	2 mos.	862	4,623	326	5,455	5,772	698	707	62	1,048	969	368	283	2,363	4,744	4,727	87.0	81.9	711	453	64	167
Chicago & Illinois Midland	Feb.	121	647	....	661	384	33	35	6	107	96	23	29	144	361	328	54.5	85.5	301	175	123	15
	2 mos.	121	1,236	....	1,264	810	63	69	13	213	192	46	60	291	728	668	57.6	82.5	536	307	226	52
Chicago & North Western	Feb.	9,280	13,290	1,486	15,799	16,108	2,451	2,474	370	2,798	2,893	1,019	556	7,130	13,930	14,499	88.2	90.0	1,868	1,335	—546	—500
	2 mos.	9,280	26,620	2,872	31,810	33,085	4,698	5,033	765	5,670	6,020	2,036	1,100	14,464	27,967	29,694	87.9	89.8	3,844	2,709	—767	—988
Chicago, Burl. & Quincy	Feb.	8,660	15,418	1,433	18,780	20,562	2,371	2,352	402	3,758	4,309	1,094	636	8,235	15,972	16,511	85.1	80.3	2,808	1,673	988	1,104
	2 mos.	8,665	30,747	3,029	37,719	42,423	4,775	4,884	800	7,691	8,529	2,168	1,293	16,762	32,498	33,836	86.2	79.8	5,221	3,139	1,714	3,076
Chicago Great Western	Feb.	1,469	2,393	8	2,573	2,698	290	345	49	377	432	127	118	934	1,789	1,898	69.5	70.3	784	281	249	295
	2 mos.	1,469	4,870	15	5,239	5,473	596	747	91	769	835	254	253	1,894	3,676	3,858	70.2	70.5	1,563	595	471	590
Chic., Milw. St. P. & Pac	Feb.	10,599	15,668	1,003	18,493	18,279	2,572	2,592	436	3,241	3,401	889	547	7,628	15,152	15,606	81.0	85.4	3,341	1,673	944	191
	2 mos.	10,599	30,004	2,151	35,830	36,846	5,159	5,297	868	6,758	6,996	1,769	1,108	15,540	30,955	32,027	86.4	86.9	4,874	3,343	153	49
Chicago, R. Is. & Pacific	Feb.	7,524	13,947	1,332	16,872	17,514	1,950	1,977	290	2,928	3,189	648	547	6,975	13,330	13,853	79.0	79.1	3,542	1,628	694	719
	2 mos.	7,524	27,393	2,777	33,431	35,192	3,767	4,052	444	5,844	6,343	1,295	1,120	14,058	26,692	28,101	79.8	79.9	6,739	3,052	1,204	1,474
Clinchfield	Feb.	293	1,708	....	1,715	1,808	207	229	23	397	294	107	66	464	1,205	1,098	70.3	60.7	510	207	445	680
	2 mos.	293	3,368	....	3,385	3,558	389	447	45	704	610	214	130	916	2,281	2,224	67.4	62.5	1,104	415	962	1,194
Colorado & Southern	Feb.	712	1,053	51	1,249	1,228	161	121	34	221	205	79	34	480	966	953	77.3	77.6	283	148	96	82
	2 mos.	712	2,074	115	2,479	2,534	336	268	77	431	418	158	71	1,054	2,031	2,004	81.9	79.1	448	247	159	155
Ft. Worth & Denver	Feb.	1,362	1,561	108	1,870	1,857	198	362	31	198	249	47	70	828	1,419	1,646	75.9	88.6	451	156	72	—31
	2 mos.	1,362	3,463	235	4,098	3,970	417	655	63	458	564	93	146	1,675	2,944	3,413	71.9	86.0	1,153	437	245	—59
Colorado & Wyoming	Feb.	39	251	....	448	353	25	23	2	38	47	12	2	155	236	211	52.6	59.6	212	125	80	57
	2 mos.	39	516	....	886	679	40	40	5	81	87	25	4	313	474	403	53.5	59.3	412	244	156	103
Delaware & Hudson	Feb.	763	3,541	135	3,819	3,739	345	372	56	853	676	197	109	1,414	2,996	2,857	78.5	76.4	823	379	462	541
	2 mos.	763	7,206	287	7,761	7,721	771	794	114	1,642	1,378	392	211	2,916	6,100	5,947	78.6	77.0	1,661	788	1,009	1,007
Delaware, Lack. & Western	Feb.	941	4,487	769	5,976	5,603	582	622	142	1,090	1,027	342	216	3,012	5,266	5,251	88.1	93.7	710	692	—198	—472
	2 mos.	941	8,817	1,530	11,810	11,635	1,162	1,278	285	2,200	2,114	685	406	6,146	10,652	10,909	90.2	93.8	1,158	1,389	—625	—903
Denver & Rio Grande Western	Feb.	2,128	6,006	198	6,400	5,749	601	567	89	978	919	326	231	1,965	4,065	3,857	63.5	67.1	2,335	1,363	991	952
	2 mos.	2,128	11,623	407	12,408	11,584	1,147	1,072	183	1,921	1,862	646	478	4,035	8,168	7,952	65.8	68.7	4,239	2,478	1,805	1,828
Detroit & Toledo Shore Line	Feb.	50	645	....	697	734	62	68	4	84	91	24	18	239	419	441	60.2	60.1	278	99	55	58
	2 mos.	50	1,232	....	1,341	1,481	107	142	8	159	182	48	38	490	829	899	61.8	60.7	512	169	83	117
Detroit, Toledo & Ironton	Feb.	465	1,877	....	1,995	1,938	256	212	29	426	390	147	61	518	1,362	1,271	68.3	65.6	633	127	479	480
	2 mos.	465	3,881	....	4,089	4,105	504	656	57	843	753	303	124	1,058	2,735	2,782	66.9	67.8	1,354	254	1,068	969
Duluth, Miss. & Iron Range	Feb.	575	559	1	628	389	458	466	113	695	593	200	13	684	2,107	1,914	335.5	491.6	—1,479	147	—1,561	—1,641
	2 mos.	575	916	1	1,067	623	833	914	185	1,461	1,203	401	28	1,391	4,228	3,893	396.1	625.3	—3,161	298	—3,316	—3,521
Duluth, So. Shore & Atlantic	Feb.	544	446	2	469	464	98	93	10	93	109	26	32	190	443	436	94.4	94.0	26	41	—36	—8
	2 mos.	544	947	6	994	882	197	196	21	194	217	52	66	376	886	887	89.1	100.6	108	83	—2	—79

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1960

Name of Road	Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	Total (inc. misc.) 1959	Operating Expenses: Maint. Way and Structures: Total 1960	Total 1959	Deprec and Retirements	Maint. Equipment: Total 1960	Total 1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	Total 1959	Operating ratio 1960	Operating ratio 1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	Net Railway operating income 1959
Duluth, Winnipeg & Pacific	Feb.	175	474	1	479	436	77	63	5	64	66	1	7	179	338	303	70.6	69.5	141	38	20	6
	2 mos.	175	980	3	993	917	150	133	10	126	128	2	15	385	677	651	68.1	70.9	316	84	65	9
Elgin, Joliet & Eastern	Feb.	205	3,754	....	4,973	4,496	385	284	32	938	781	126	40	1,926	3,677	3,265	73.9	72.6	1,296	629	273	230
	2 mos.	205	7,681	....	10,105	8,922	714	554	58	1,664	1,440	251	85	3,897	7,060	6,339	69.9	71.0	3,046	1,466	750	624
Erie	Feb.	2,239	11,797	525	13,368	12,085	1,321	1,217	228	2,149	2,085	557	401	6,170	10,778	10,402	80.6	86.1	2,590	1,191	643	—165
	2 mos.	2,239	23,531	1,110	26,735	24,150	2,546	2,523	457	4,366	4,064	1,124	783	12,368	21,551	21,123	80.6	87.5	5,184	2,384	1,276	—628
Florida East Coast	Feb.	572	2,147	586	3,024	3,118	427	441	48	572	600	117	88	1,091	2,375	2,521	78.5	80.8	649	218	184	112
	2 mos.	572	4,529	1,141	6,242	6,637	879	938	95	1,179	1,275	235	175	2,263	4,910	5,268	78.7	79.4	1,332	444	412	380
Georgia Railroad	Feb.	321	479	15	579	619	85	92	7	116	121	35	40	285	563	578	97.2	93.3	16	43	—18	14
	2 mos.	321	988	29	1,189	1,298	171	184	15	230	248	70	79	581	1,138	1,199	95.7	92.4	51	85	8	48
Georgia & Florida	Feb.	321	260	....	266	296	90	68	3	42	58	10	23	95	269	268	101.4	90.6	—4	20	—45	—19
	2 mos.	321	533	....	545	609	165	137	8	86	91	20	47	192	529	509	97.1	83.5	16	39	—63	11
Grand Trunk Western	Feb.	951	4,257	241	4,915	5,307	662	694	59	822	825	112	92	2,213	4,024	4,227	81.9	79.6	891	403	55	95
	2 mos.	951	8,769	445	10,134	10,131	1,281	1,362	106	1,663	1,712	224	181	4,491	8,094	8,693	79.9	85.8	2,040	810	342	—431
Great Northern	Feb.	8,288	16,186	541	17,874	17,078	2,447	2,390	308	3,670	3,166	881	509	6,903	14,569	13,960	81.5	81.7	3,305	1,772	1,251	1,244
	2 mos.	8,288	30,968	1,194	34,444	34,898	4,767	4,850	619	7,512	7,027	1,757	1,115	14,386	29,782	29,335	86.5	84.1	4,662	3,652	693	1,707
Green Bay & Western	Feb.	219	376	....	387	377	48	49	5	36	48	9	26	117	252	276	65.0	73.1	136	76	23	19
	2 mos.	219	719	....	744	744	91	88	9	82	103	17	56	239	517	546	69.6	73.4	226	121	40	39
Gulf Mobile & Ohio	Feb.	2,752	5,465	213	6,131	6,149	777	794	75	1,312	1,320	301	296	2,235	4,980	4,962	81.2	80.7	1,151	543	298	263
	2 mos.	2,752	11,072	473	12,442	12,857	1,656	1,760	147	2,654	2,663	604	590	4,567	10,192	10,307	81.9	80.2	2,250	1,088	366	623
Illinois Central	Feb.	6,500	17,098	1,911	21,165	20,626	3,139	3,153	373	4,256	4,077	846	648	8,581	17,697	17,348	83.6	84.1	3,469	1,926	560	879
	2 mos.	6,500	34,352	3,806	42,638	42,485	6,283	6,410	743	8,592	8,484	1,695	1,313	17,083	35,460	35,985	83.2	84.5	7,178	4,083	1,452	1,877
Illinois Terminal	Feb.	335	671	....	746	758	86	80	3	144	189	31	45	304	637	706	85.4	93.2	109	16	12	—19
	2 mos.	335	1,316	....	1,467	1,569	170	183	5	290	353	61	93	622	1,286	1,442	87.7	91.9	181	29	—10	—31
Kansas City Southern	Feb.	891	3,185	57	3,582	3,626	240	276	38	479	451	114	93	1,150	2,085	2,051	58.2	56.6	1,497	649	618	688
	2 mos.	891	6,419	117	7,241	7,469	466	541	105	1,011	912	226	196	2,363	4,290	4,188	59.2	56.1	2,951	1,254	1,200	1,413
Kansas, Oklahoma & Gulf	Feb.	327	371	....	372	553	40	47	7	38	43	12	34	102	244	245	65.4	44.3	129	54	25	122
	2 mos.	327	794	....	795	1,124	78	94	15	83	82	24	69	205	492	504	61.9	44.8	303	130	74	245
Lake Superior & Ishpeming	Feb.	160	82	....	109	77	45	40	12	77	54	36	2	64	205	162	187.8	210.3	—96	43	—130	—109
	2 mos.	160	144	....	194	171	87	89	24	150	120	71	4	131	409	353	211.2	206.6	—215	87	—278	—231
Lehigh & Hudson River	Feb.	96	236	....	237	243	25	27	2	32	29	8	15	104	193	180	81.7	74.0	43	14	—3	11
	2 mos.	96	500	....	501	519	48	51	5	63	62	17	31	216	396	394	79.1	76.0	105	37	—2	13
Lehigh & New England	Feb.	177	312	....	316	386	45	51	8	167	130	39	18	163	442	425	139.7	109.9	—126	29	—90	25
	2 mos.	177	646	....	654	781	92	101	16	341	281	78	37	348	917	899	140.3	115.1	—263	59	—174	9
Lehigh Valley	Feb.	1,127	4,443	118	4,746	4,418	654	559	98	822	854	175	144	2,352	4,206	4,124	88.6	93.4	541	469	—157	—325
	2 mos.	1,127	8,831	252	9,472	8,786	1,200	1,155	194	1,654	1,844	368	276	4,735	8,333	8,654	88.0	98.5	1,139	936	—228	—1,123
Long Island	Feb.	344	931	4,536	5,668	4,947	777	713	95	1,039	980	169	39	2,922	4,986	4,701	88.0	95.0	683	406	75	—309
	2 mos.	344	1,825	9,071	11,287	10,393	1,575	1,495	221	2,065	2,070	339	88	5,903	10,067	9,822	89.2	94.5	1,220	830	2	—490
Louisiana & Arkansas	Feb.	746	2,011	37	2,174	1,936	183	177	23	306	268	98	76	649	1,288	1,207	59.3	62.3	886	451	310	256
	2 mos.	746	4,045	73	4,388	3,989	305	329	43	618	538	196	160	1,360	2,598	2,458	59.2	61.6	1,790	903	625	552
Louisville & Nashville	Feb.	5,684	16,747	599	18,724	18,455	2,500	2,554	318	3,776	4,049	1,145	494	7,187	14,852	15,020	79.3	81.4	3,872	2,505	1,603	1,333
	2 mos.	5,684	33,191	1,289	37,379	37,015	5,000	5,122	658	7,534	8,123	2,285	967	14,856	30,201	31,152	80.8	84.2	7,178	4,892	2,694	2,159
Maine Central	Feb.	936	1,963	22	2,114	1,950	364	351	28	386	363	84	32	776	1,667	1,667	78.8	85.5	447	195	149	105
	2 mos.	936	4,036	52	4,357	4,225	696	717	56	775	735	167	63	1,573	3,333	3,483	76.5	82.5	1,024	468	353	260
Minneapolis & St. Louis	Feb.	1,391	1,540	....	1,583	1,659	243	245	31	322	299	101	120	605	1,422	1,456	89.8	87.7	162	168	—18	37
	2 mos.	1,391	3,229	1	3,321	3,426	499	502	60	590	576	203	252	1,209	2,823	2,944	85.0	85.9	498	372	99	161
Minn., Northfield & Southern	Feb.	77	290	....	303	382	18	17	3	39	37	13	34	91	217	199	71.8	52.1	85	56	27	74
	2 mos.	77	584	....	615	738	35	34	5	88	76	26	66	178	440	414	71.5	56.1	175	111	55	128
Minn., St. P. & S. Ste. Marie	Feb.	3,222	2,560	36	2,728	2,860	487	549	47	617	612	145	107	1,335	2,734	2,789	100.2	97.5	—6	228	—242	—270
	2 mos.	3,222	5,025	77	5,390	6,111	981	1,050	95	1,215	,365	289	220	2,772	5,569	5,889	103.3	96.4	—178	113	—405	—438
Missouri Illinois	Feb.	172	422	....	425	372	31	39	1	79	77	40	11	122	257	249	60.5	66.9	168	141	80	73
	2 mos.	172	839	....	844	666	74	91	6	163	170	80	26	239	529	525	62.6	78.8	316	265	154	99
M-K-T Lines	Feb.	2,917	4,018	68	4,440	4,529	460	500	84	776	816	262	181	1,676	3,295	3,309	74.2	73.1	1,146	350	328	350
	2 mos.	2,918	8,212	144	9,047	9,360	851	955	144	1,820	1,755	524	359	3,362	6,807	6,833	75.2	73.0	2,240	702	603	684
Missouri Pacific	Feb.	9,413	20,382	732	23,417	22,594	2,557	2,614	320	4,144	4,106	1,137	701	9,164	17,550	17,298	74.9	76.6	5,866	1,975	2,691	2,667
	2 mos.	9,413	40,820	1,693	46,970	46,388	5,219	5,333	631	8,514	8,381	2,271	1,406	18,605	35,737	35,785	76.1	77.1	11,233	3,728	5,149	5,026
Monon	Feb.	541	1,453	23	1,566	1,608	216	204	20	287	296	77	102	654	1,365	1,377	87.1	85.6	202	119	—18	77
	2 mos.	541	2,898	52	3,143	3,171	417	412	41	570	592	152	205	1,306	2,708	2,814	86.1	88.7	436	243	13	104
Monongahela	Feb.	177	571	....	574	356	76	60	12	55	61	11	11	143	287	297	50.0	83.3	287	81	151	46
	2 mos.	177	1,122	....	1,128	733	147	124	25	110	119	22	2	296	577	793	51.1	108.1	552	160	292	—200
New York Central	Feb.	10,368	43,195	5,728	56,486	54,058	5,950	5,903	1,070	11,250	10,700	2,452	1,059	26,900	48,181	47,833	85.3	88.5	8,305	5,771	651	—694
	2 mos.	10,368	87,270	11,809	114,873	110,568	11,573	12,281	2,137	22,500	21,400	4,900	2,153	53,897	96,180	97,794	83.7	88.4	18,694	11,649	3,261	—832
Pitts. & Lake Erie	Feb.	220	3,146	36	3,339	2,746	429	328	57	816	858	330	69	1,185	2,707	2,562	81.1	93.3	632	742	1,055	723
	2 mos.	220	6,383	72	6,785	5,376	799	687	113	1,653	1,804	663	134	2,389	5,400	5,259	79.6	97.8	1,385	1,631	2,205	1,500
New York, Chic. & St. L.	Feb.	2,170	12,082	114	12,608	11,764	1,229	1,212	158	2,056	1,882	470	338	4,691	8,771	8,402	69.6	71.4	3,837	1,897	1,393	1,374
	2 mos.	2,170	24,621	267	25,724	23,639	2,473	2,540	318	4,187	3,922	947	691	9,591	17,899	17,528	69.6	74.2	7,825	3,788	2,765	2,497
New York, N. H. & Hartford	Feb.	1,762	6,071	3,698	11,279	11,439	1,308	246	265	1,714	1,772	477	282	5,603	9,863	9,847	87.4	86.1	1,417	1,036	—1,017	—665
	2 mos.	1,762	12,214	7,412	22,693	23,200	2,615	2,497	541	3,539	3,699	1,014	547	11,508	20,116	20,346	88.6	87.7	2,577	2,102	—2,397	—1,834
New York Connecting	Feb.	21	288	....	313	301	64	60	25	14	15	....	....	90	172	165	54.9	55.0	141	89	26	51
	2 mos.	21	600	....	643	648	129	133	51	28	29	....	....	193	357	343	55.6	53.0	286	178	61	122
New York, Sus. & Western	Feb.	100	314	14	346	325	44	35	7	53	53	11	8	154	288	293	83.3	90.0	58	34	—19	—28
	2 mos.	100	612	31	675	650	89	74	13	103	114	21	17	314	583	611	86.4	94.0	92	68	—63	—90

(Continued on next page)

a RAILWAY AGE Service Page

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Norfolk & Western	Feb.	2,743	18,588	191	19,647	19,776	2,375	2,241	414	3,507	3,597	1,471	373	5,520	12,459	12,606	63.4	63.7	7,187	3,745	4,594	4,456
	2 mos.	2,743	38,880	383	40,969	40,973	4,592	4,461	824	6,965	7,184	2,944	739	11,221	24,960	25,700	60.9	62.7	16,009	8,454	10,165	9,481
Norfolk Southern	Feb.	592	704	....	716	726	165	174	14	133	114	40	50	231	642	650	89.6	89.5	75	54	21	2
	2 mos.	592	1,386	....	1,410	1,437	315	347	28	266	240	80	102	482	1,289	1,326	91.4	92.2	121	108	12	—38
Northern Pacific	Feb.	6,828	12,085	368	13,372	12,989	1,718	1,747	281	2,869	2,841	801	420	5,737	11,624	11,427	86.9	88.0	1,748	1,437	696	448
	2 mos.	6,828	23,128	797	25,947	26,390	3,470	3,326	566	5,767	5,681	1,590	835	11,756	23,637	23,169	91.1	87.8	2,310	2,890	—88	925
Northwestern Pacific	Feb.	328	927	....	933	961	246	229	18	67	82	3	8	286	632	632	67.8	65.7	301	101	30	37
	2 mos.	328	1,795	....	1,810	1,953	455	454	38	144	163	5	15	594	1,263	1,313	69.8	67.2	547	183	9	99
Pacific Electric	Feb.	354	916	....	1,041	1,052	160	166	24	22	52	4	22	475	781	803	75.0	76.3	260	154	—14	24
	2 mos.	354	1,759	....	1,992	2,166	344	394	47	61	107	8	44	991	1,643	1,729	82.5	79.8	349	306	—200	—45
Pennsylvania	Feb.	9,895	56,693	8,577	74,037	67,682	7,483	6,923	1,486	15,014	15,000	2,880	1,225	34,177	62,251	59,983	84.1	88.6	11,786	5,961	—204	—1,603
	2 mos.	9,895	115,794	18,241	151,340	138,963	14,741	14,109	2,945	30,071	30,214	5,836	2,442	69,171	125,208	122,800	82.7	88.4	26,133	12,144	2,309	—3,340
Penn-Reading S.S. Lines	Feb.	338	544	54	616	555	172	179	27	127	126	26	7	471	830	811	134.8	146.0	—214	77	—456	—454
	2 mos.	338	1,094	103	1,236	1,100	343	360	52	240	257	52	16	949	1,653	1,667	133.7	151.6	—417	154	—918	—981
Piedmont & Northern	Feb.	126	521	....	533	539	46	35	5	42	29	10	32	92	249	214	46.6	39.8	285	137	88	107
	2 mos.	126	986	....	1,012	1,021	89	82	9	75	60	20	65	188	491	451	48.5	44.2	521	253	150	180
Pittsburgh & West Virginia	Feb.	132	740	....	747	622	147	140	25	145	152	45	74	209	634	650	84.9	104.6	113	50	60	10
	2 mos.	132	1,561	....	1,577	1,324	292	271	56	299	311	91	151	436	1,294	1,314	82.0	99.2	283	127	131	55
Reading	Feb.	1,303	8,270	485	9,316	8,503	1,117	988	184	1,851	1,654	479	195	3,976	7,627	7,266	81.9	85.4	1,689	522	586	563
	2 mos.	1,303	16,760	967	18,904	17,281	2,233	2,000	377	3,780	3,391	959	382	8,255	15,631	14,839	82.7	85.9	3,273	1,110	1,128	1,170
Richmond, Fred. & Potomac	Feb.	118	1,276	453	2,066	1,905	162	169	28	293	289	67	34	713	1,340	1,384	64.9	72.6	726	426	287	122
	2 mos.	118	2,654	946	4,226	3,958	333	325	56	596	588	133	60	1,456	2,740	2,817	64.8	71.2	1,487	872	442	304
Rutland	Feb.	391	333	....	357	369	82	74	9	54	59	18	27	146	336	347	94.0	93.9	21	31	—10	—14
	2 mos.	391	655	....	704	746	150	150	19	116	121	36	54	301	673	705	95.5	94.5	31	61	—31	—29
St. Louis-San Francisco	Feb.	4,557	8,371	178	9,332	8,693	1,526	1,453	135	1,617	1,561	606	350	3,850	7,938	7,365	85.1	84.7	1,394	487	699	628
	2 mos.	4,557	16,905	393	18,790	18,062	3,030	3,026	321	3,225	3,268	1,212	702	7,879	16,092	15,449	85.6	85.5	2,697	987	1,379	1,163
St. Louis-S. F. & Texas	Feb.	143	501	3	523	473	35	21	4	28	29	1	23	137	234	225	44.8	47.6	289	126	99	83
	2 mos.	143	914	5	955	903	67	43	8	64	59	3	45	293	494	464	51.8	51.4	460	181	142	141
St. Louis Southwest. Lines	Feb.	1,554	5,708	....	5,766	4,797	552	568	69	658	631	208	187	1,740	3,277	3,277	56.8	68.3	2,489	1,082	1,078	611
	2 mos.	1,554	11,049	1	11,174	10,180	1,107	1,166	150	1,324	1,294	414	368	3,575	6,704	6,726	60.0	66.1	4,470	1,918	1,947	1,457
Savannah & Atlanta	Feb.	144	312	....	324	302	42	51	2	66	56	19	16	107	244	240	75.4	79.2	80	30	36	38
	2 mos.	144	624	....	652	612	91	104	3	127	118	39	33	222	499	489	76.6	80.0	152	60	65	73
Seaboard Air Line	Feb.	4,147	10,662	1,256	13,048	12,979	1,714	1,571	207	2,654	2,524	727	468	4,770	10,306	9,878	79.0	76.1	2,743	1,084	1,408	1,500
	2 mos.	4,147	24,534	2,597	27,375	27,005	3,439	3,352	409	5,221	5,074	1,454	943	9,810	20,816	20,382	76.0	75.5	6,559	2,980	2,906	3,177
Southern Railway	Feb.	6,267	18,915	930	21,448	20,743	2,695	3,176	307	3,852	3,820	994	511	7,034	15,279	15,436	71.2	74.4	6,169	2,797	2,738	2,517
	2 mos.	6,267	38,504	1,922	43,595	42,433	5,317	6,678	615	7,477	7,555	1,990	1,008	14,441	30,634	31,618	70.3	74.5	12,961	5,799	5,650	4,972
Alabama Great Southern	Feb.	328	1,236	37	1,406	1,385	284	230	35	303	311	81	42	478	1,209	1,143	86.0	82.5	197	99	22	65
	2 mos.	328	2,454	81	2,808	2,800	535	487	70	595	607	162	83	1,006	2,418	2,312	86.1	82.6	389	190	41	175
Cinn., N. O. & Texas Pac.	Feb.	337	2,783	91	3,089	3,105	582	587	71	767	732	237	83	907	2,527	2,431	81.8	78.3	562	239	414	495
	2 mos.	337	5,638	179	6,239	6,441	1,166	1,138	141	1,488	1,442	461	166	1,843	5,036	4,837	80.7	75.1	1,203	517	873	1,103
Georgia Southern & Florida	Feb.	397	593	35	704	798	186	144	11	74	87	10	22	263	601	555	85.4	69.6	103	27	—57	50
	2 mos.	397	1,335	75	1,572	1,714	354	274	22	147	159	21	45	514	1,172	1,088	74.5	63.5	400	87	—17	155
New Orleans & Northeastern	Feb.	203	640	29	735	885	167	250	23	211	200	93	27	261	739	804	100.4	90.9	—3	82	—27	32
	2 mos.	203	1,346	63	1,538	1,806	343	421	47	417	404	184	55	541	1,502	1,529	97.6	84.6	36	173	—20	125
Southern Pacific	Feb.	8,066	38,744	1,933	43,060	40,183	4,945	4,866	464	9,462	8,621	2,563	801	15,690	32,954	31,716	76.5	78.9	10,105	5,187	4,704	3,881
	2 mos.	8,066	75,667	3,985	84,930	81,589	9,933	9,676	952	19,043	17,412	5,120	1,548	32,326	67,006	64,933	78.9	79.6	17,924	9,229	8,167	7,619
Texas & New Orleans	Feb.	4,092	9,801	233	10,645	10,564	1,766	1,732	153	1,669	1,561	204	239	3,925	8,188	8,038	76.9	76.1	2,457	946	324	547
	2 mos.	4,093	19,742	501	21,433	21,844	3,520	3,565	299	3,329	3,195	410	473	8,122	16,918	16,604	77.5	76.0	4,814	1,929	627	1,093
Spokane International	Feb.	150	235	....	242	262	41	39	5	26	33	10	4	63	144	153	59.4	58.4	98	52	27	41
	2 mos.	150	453	....	469	475	79	71	8	53	66	20	9	125	284	299	60.6	63.0	184	90	51	63
Spokane, Portland & Seattle	Feb.	936	2,314	56	2,540	2,473	391	394	56	479	352	129	33	971	1,992	1,821	78.4	73.6	548	236	233	369
	2 mos.	936	4,487	142	4,961	5,229	741	825	113	979	970	258	76	2,018	4,075	4,038	82.1	77.2	886	483	214	591
Tennessee Central	Feb.	284	299	....	327	332	47	36	5	52	52	21	15	121	256	249	78.4	75.0	71	26	5	25
	2 mos.	284	593	....	643	695	95	72	10	109	110	43	30	244	524	513	81.6	73.8	119	51	—17	56
Texas Pacific	Feb.	1,828	5,136	262	5,965	5,844	667	667	99	1,075	1,043	281	220	2,445	4,759	4,674	79.8	80.0	1,206	508	236	244
	2 mos.	1,828	10,497	582	12,199	12,565	1,404	1,413	198	2,143	2,162	562	450	5,070	9,805	9,851	80.4	78.4	2,394	1,005	474	639
Texas Mexican	Feb.	161	243	....	262	272	51	58	6	33	33	11	13	76	198	211	75.8	77.6	63	32	10	3
	2 mos.	161	448	....	483	508	104	111	12	67	65	23	25	158	401	413	82.9	81.3	83	45	....	—4
Toledo, Peoria & Western	Feb.	239	598	....	619	591	79	69	7	52	51	13	52	169	392	380	63.3	64.2	227	100	59	58
	2 mos.	239	1,190	....	1,234	1,178	148	134	13	101	106	27	103	341	773	755	62.6	64.1	462	199	117	114
Union Pacific	Feb.	9,742	33,355	1,657	37,766	38,650	4,415	4,825	738	7,618	7,838	2,363	1,144	13,517	28,813	29,261	76.3	75.7	8,954	6,098	1,485	2,508
	2 mos.	9,742	67,875	3,642	77,056	79,572	9,008	9,933	1,447	15,538	16,084	4,732	2,533	28,318	59,778	60,963	77.6	76.6	17,278	11,416	2,945	4,887
Virginian	Feb.	Merged with Norfolk & Western effective December 1, 1959.																				
	2 mos.																					
Wabash	Feb.	2,413	7,938	407	9,287	9,296	1,048	1,107	125	1,442	1,370	473	317	4,367	7,616	7,771	82.0	83.6	1,671	704	227	229
	2 mos.	2,413	15,882	829	18,526	18,935	1,942	2,307	225	2,863	2,807	947	671	8,759	15,132	15,844	81.7	83.7	3,394	1,387	537	628
Ann Arbor	Feb.	294	707	....	712	695	72	81	4	162	136	45	28	369	647	607	90.9	87.3	65	58	—31	27
	2 mos.	294	1,486	....	1,496	1,400	151	163	5	332	293	89	61	743	1,326	1,268	88.6	90.6	170	115	—4	8
Western Maryland	Feb.	843	3,672	....	3,780	3,724	608	542	57	834	855	301	117	1,296	3,062	3,044	81.0	81.7	718	446	600	642
	2 mos.	843	8,078	....	8,292	7,663	1,235	1,118	113	1,680	1,704	602	236	2,670	6,250	6,155	75.4	80.3	2,042	1,235	1,536	1,323
Western Pacific	Feb.	1,188	3,867	129	4,093	3,946	568	511	75	686	655	226	293	1,566	3,464	3,079	84.6	78.0	629	339	263	455
	2 mos.	1,188	7,626	287	8,099	8,181	1,093	1,002	153	1,360	1,345	454	539	3,175	6,855	6,336	84.6	77.5	1,244	689	533	947
Wisconsin Central	Feb.	1,031	2,416	13	2,569	2,341	273	305	44	440	455	110	104	1,174	2,135	2,128	83.1	90.9	433	192	—9	—161
	2 mos.	1,031	4,718	28	5,027	4,758	596	604	104	832	909	221	211	2,372	4,299	4,309	85.5	90.6	728	392	—159	—202

MARKET OUTLOOK *at a glance*

Carloadings Rise 0.4% Above Previous Week's

Loadings of revenue freight in the week ended April 23 totaled 625,374 cars, the Association of American Railroads announced on April 28. This was an increase of 2,739 cars, or 0.4%, compared with the previous week; a decrease of 23,945 cars, or 3.7%, compared with the corresponding week last year; and an increase of 91,523 cars, or 17.1%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended April 16 totaled 622,635 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, April 16

District	1960	1959	1958
Eastern	91,867	96,687	82,642
Allegheny	112,556	121,612	91,980
Pocahontas ...	56,702	52,840	42,754
Southern	126,028	119,311	106,350
Northwestern ..	76,074	75,834	59,174
Central Western	109,786	117,611	104,901
Southwestern ..	49,622	50,953	46,706
Total Western Districts	235,482	244,398	210,781
Total All Roads	622,635	634,848	534,507
Commodities:			
Grain and grain products	46,518	48,296	52,598
Livestock	3,952	5,575	5,092
Coal	112,503	105,161	95,491
Coke	9,370	10,815	5,250
Forest Products .	41,533	39,737	30,908
Ore	40,346	32,827	13,222
Merchandise l.c.l.	37,867	42,513	45,891
Miscellaneous ..	330,546	349,924	286,055
April 16	622,635	634,848	534,507
April 9	598,384	619,268	521,160
April 2	598,031	590,592	516,247
March 26	600,926	604,392	532,273
March 19	581,477	603,885	532,997
Cumulative total, 15 weeks	8,798,615	8,811,869	8,076,691

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended April 16 totaled 10,614 cars, compared with 8,031 for the corresponding 1959 week. Loadings for 1960 up to April 16 totaled 155,597 cars, compared with 109,071 for the corresponding period of 1959.

IN CANADA.—Carloadings for the seven-day period ended April 14 totaled 67,467 cars, compared with 64,521 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
April 14, 1960	67,467	28,779
April 14, 1959	71,526	28,054
Cumulative Totals		
April 14, 1960	975,861	443,806
April 14, 1959	967,104	411,554

New Equipment

FREIGHT-TRAIN CARS

► *Atlantic Coast Line.*—Ordered 1,000 roller-bearing freight cars at a cost of over $11,000,000. ACF will build 300 gondola cars, 200 wet rock cars and 100 box cars. Greenville Steel Car will build 200 wood chip cars. Pullman-Standard will build 200 hopper cars. The 100 box cars will be 50-ft, 50-ton capacity cars. Other cars will be of 70-ton capacity. Deliveries will begin in July and be completed in September.

► *Baltimore & Ohio.*—Ordered 12 cabooses from its Washington, Ind., shops for delivery late this year.

► *General American.*—Plans expenditure of approximately $30,000,000 in 1960, primarily for fleet equipment, to include tank cars and Dry-Flo and Airslide covered hopper cars.

► *Santa Fe.*—1960 equipment acquisition program includes orders for 1,800 cars: 300 box cars, 200 insulated box cars, and 200 auto box cars, all equipped with Shock Control underframes and all to be built at Topeka, Kan., company shops; 500 mechanical refrigerator cars from General American; 300 gondolas from Magor; 150 70-ton hopper cars from Greenville Steel Car; and 150 53-ft flat cars from Topeka company shops.

PIGGYBACK

► *Rail-Trailer Co.*—Purchased 26 85-ft, roller-bearing piggyback flat cars from ACF—the nucleus, according to Rail-Trailer President E. F. Ryan, of "a modern new Rail-Trailer flat car fleet for piggyback leasing." Twenty-five of the cars are for lease to the Erie; the 26th will be used as a demonstrator or exhibition car.

PASSENGER-TRAIN CARS

► *Milwaukee.*—Plans purchase of 75 double-deck suburban coaches at total cost of approximately $13,125,000, provided fare increases sufficient to support such program can be obtained. Cars would be ordered over three-year period, would eventually replace all conventional equipment in suburban service.

► *New York City Transit Authority.*—Will ask the Board of Estimate for $10,000,000 next year to buy 80 IRT subway cars to transport visitors to the 1964 World's Fair at Flushing Meadow. This special order would be in addition to 100 IRT cars, costing an estimated $12,000,000, for which the authority originally planned to seek funds in 1961.

► *Santa Fe.*—Ordered 25 baggage car shells from Pullman-Standard. Construction will be completed at Topeka company shops. Deliveries will begin in June.

(Continued on following page)

MARKET OUTLOOK (continued)

New Facilities

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Maintenance of Equipment	148,983,378	145,179,606	+2.6
Totals	243,545,468	238,334,175	+2.2

Purchases & Inventories

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Crossties	5,064	5,042
Other Material	79,345	68,890
Fuel	32,796	38,961
Total	$125,493	$120,896

*Subject to revision.

INVENTORIES * †	January 1, 1960	January 1, 1959
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Other Material	397,657	397,877
Scrap	24,284	26,349
Fuel	21,406	22,959
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'Construction Reserve' No Subsidy, Says ATSF's Reed

A strong pitch for a "construction reserve" was made by Santa Fe Vice President—Finance John S. Reed in an address before the New York Society of Security Analysts April 22.

Mr. Reed said equipment replacement presents "what is probably the most significant financial problem facing the railroad industry in today's inflationary economy." He added:

"When we are faced with replacing a unit of equipment such as a freight car, the accumulated depreciation accruals, based as they are on the original costs of the old equipment purchased 25-30 years ago, represent only about a third of the cost of replacing that car 'in kind' today. As a practical matter, the replacement cost is further inflated by the many extra features that a new car must have to make it acceptable to today's shippers. The difference between the depreciation accruals and the present-day cost must come from after-tax earnings.

"To the extent that depreciation accruals fail to provide the money for these replacements that we need just to stay in business, our profits are overstated and taxed away—which is really a form of capital levy. It is the reason why we are so strongly in favor of the proposal for a 'construction reserve' which would permit us to set aside funds for capital improvements and deduct them from taxable income of that year, with the requirement that the funds be used for improvement purposes within five years. Failure to do such would make the funds taxable with some additional penalties.

"Such a reserve would in no sense be a subsidy. It would just represent a change in timing for the period in which the railway could take its deduction. A 'construction reserve' would have the future advantage of allowing railway managements to plan their modernization plans ahead and permit more orderly execution of their programs."

Dividends Declared

ATLANTA & CHARLOTTE AIR LINE.—$4.50, semiannual, payable Sept. 1 to holders of record Aug. 20.

ATLANTIC COAST LINE.—50¢, quarterly, payable June 13 to holders of record May 4.

CLEARFIELD & MAHONING.—$1.50, semiannual, payable July 1 and Jan. 1, 1961, to holders of record June 17 and Dec. 16, respectively.

CLEVELAND & PITTSBURGH.—7% guaranteed, 87½¢, quarterly; 4% special guaranteed, 50¢, quarterly, both payable June 1 to holders of record May 10.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75, quarterly, payable June 1 to holders of record May 20.

ST. LOUIS-SAN FRANCISCO.—25¢, quarterly, payable June 15 to holders of record June 1.

MARKET OUTLOOK *at a glance*

Carloadings Rise 0.4% Above Previous Week's

Loadings of revenue freight in the week ended April 23 totaled 625,374 cars, the Association of American Railroads announced on April 28. This was an increase of 2,739 cars, or 0.4%, compared with the previous week; a decrease of 23,945 cars, or 3.7%, compared with the corresponding week last year; and an increase of 91,523 cars, or 17.1%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended April 16 totaled 622,635 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, April 16

District	1960	1959	1958
Eastern	91,867	96,687	82,642
Allegheny	112,556	121,612	91,980
Pocahontas ...	56,702	52,840	42,754
Southern	126,028	119,311	106,350
Northwestern ..	76,074	75,834	59,174
Central Western	109,786	117,611	104,901
Southwestern ..	49,622	50,953	46,706
Total Western Districts	235,482	244,398	210,781
Total All Roads	622,635	634,848	534,507
Commodities:			
Grain and grain products	46,518	48,296	52,598
Livestock	3,952	5,575	5,092
Coal	112,503	105,161	95,491
Coke	9,370	10,815	5,250
Forest Products .	41,533	39,737	30,908
Ore	40,346	32,827	13,222
Merchandise l.c.l.	37,867	42,513	45,891
Miscellaneous ..	330,546	349,924	286,055
April 16	622,635	634,848	534,507
April 9	598,384	619,268	521,160
April 2	598,031	590,592	516,247
March 26	600,926	604,392	532,273
March 19	581,477	603,885	532,997
Cumulative total, 15 weeks	8,798,615	8,811,869	8,076,691

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended April 16 totaled 10,614 cars, compared with 8,031 for the corresponding 1959 week. Loadings for 1960 up to April 16 totaled 155,597 cars, compared with 109,071 for the corresponding period of 1959.

IN CANADA.—Carloadings for the seven-day period ended April 14 totaled 67,467 cars, compared with 64,521 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
April 14, 1960	67,467	28,779
April 14, 1959	71,526	28,054
Cumulative Totals		
April 14, 1960	975,861	443,806
April 14, 1959	967,104	411,554

New Equipment

FREIGHT-TRAIN CARS

► *Atlantic Coast Line.*—Ordered 1,000 roller-bearing freight cars at a cost of over $11,000,000. ACF will build 300 gondola cars, 200 wet rock cars and 100 box cars. Greenville Steel Car will build 200 wood chip cars. Pullman-Standard will build 200 hopper cars. The 100 box cars will be 50-ft, 50-ton capacity cars. Other cars will be of 70-ton capacity. Deliveries will begin in July and be completed in September.

► *Baltimore & Ohio.*—Ordered 12 cabooses from its Washington, Ind., shops for delivery late this year.

► *General American.*—Plans expenditure of approximately $30,000,000 in 1960, primarily for fleet equipment, to include tank cars and Dry-Flo and Airslide covered hopper cars.

► *Santa Fe.*—1960 equipment acquisition program includes orders for 1,800 cars: 300 box cars, 200 insulated box cars, and 200 auto box cars, all equipped with Shock Control underframes and all to be built at Topeka, Kan., company shops; 500 mechanical refrigerator cars from General American; 300 gondolas from Magor; 150 70-ton hopper cars from Greenville Steel Car; and 150 53-ft flat cars from Topeka company shops.

PIGGYBACK

► *Rail-Trailer Co.*—Purchased 26 85-ft, roller-bearing piggyback flat cars from ACF—the nucleus, according to Rail-Trailer President E. F. Ryan, of "a modern new Rail-Trailer flat car fleet for piggyback leasing." Twenty-five of the cars are for lease to the Erie; the 26th will be used as a demonstrator or exhibition car.

PASSENGER-TRAIN CARS

► *Milwaukee.*—Plans purchase of 75 double-deck suburban coaches at total cost of approximately $13,125,000, provided fare increases sufficient to support such program can be obtained. Cars would be ordered over three-year period, would eventually replace all conventional equipment in suburban service.

► *New York City Transit Authority.*—Will ask the Board of Estimate for $10,000,000 next year to buy 80 IRT subway cars to transport visitors to the 1964 World's Fair at Flushing Meadow. This special order would be in addition to 100 IRT cars, costing an estimated $12,000,000, for which the authority originally planned to seek funds in 1961.

► *Santa Fe.*—Ordered 25 baggage car shells from Pullman-Standard. Construction will be completed at Topeka company shops. Deliveries will begin in June.

(Continued on following page)

MARKET OUTLOOK (continued)

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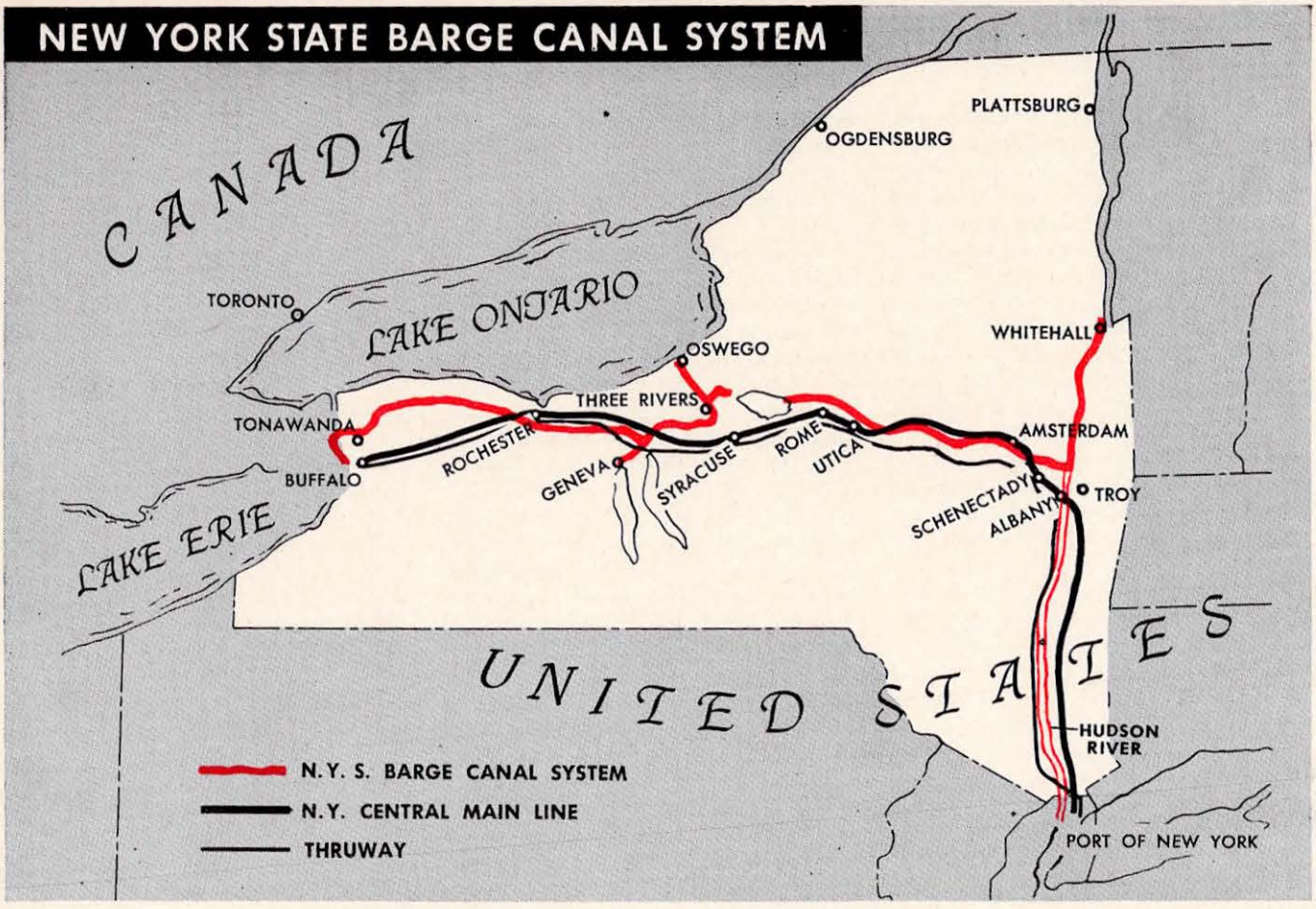

The Continuing Outrage

Creeping Canalism

The Erie Canal, grandfather of the inland waterways, is on the block—offered free to the federal government as far as taxpayers in New York are concerned.

The state's voters endorsed the transfer in a referendum last November. Along with the 338-mile Erie would go 186 miles of supplemental waterways—524 miles altogether.

"Take it," said the taxpayers, "and Godspeed."

Neither the state legislature nor the federal government has moved to effect the transfer yet. But pressure to have it done is increasing.

Now the Port of New York Authority, hardly a partisan on the side of the railroads, has thrown its hat in the ring. At hearings conducted by the Corps of Engineers in Albany, a Port Authority spokesman urged the engineers "to undertake a major modernization" of the canal system to help strengthen the state's economy.

Some railroaders were reminded of the late Governor Al Smith's comment that the state would be better off financially if it got rid of the canal and shifted all the traffic over to the railroads at taxpayers' expense . . .

As shown in the accompanying map, the matter of transferring canal traffic to the rails presents no major cross-country transfers—the main line of New York Central, New York City-to-Buffalo, closely parallels the waterway. For that matter, so does the modern four-lane New York Thruway.

Neither logic nor alternative transport facilities seem to matter, however.

The Port Authority, for example, suggests a two-stage modernization program for the canal system. The first stage calls for widening channels, easing bends and modifying locks so a single tug could maneuver two barges, instead of one, through present facilities.

The second stage is replacement of existing locks. The present 328-ft-long by 45-ft-wide locks would be "modernized" by expanding them to 600-ft-long by 90-ft-wide where possible. There are 57 locks on the 524-mile barge system.

Estimates of the cost of reconstructing the canal system vary widely. Last summer, during the campaign to have New York voters approve the state-to-federal transfer, figures were cited ranging from a low of $200 million to a high of $800 million.

There's quite a gap in these figures. It suggests there is less concern with price than with promotion. That's often the case nowadays. Improved waterways in the United States, for instance, have been expanded to around 29,000 miles because of it.

Corps of Engineers' figures show total tonnage on the New York canal system now runs about 4,500,000 tons a year. How much additional business will float across the state, if the canal system is "modernized," is a moot question. Competing railroads can certainly expect to feel the pinch, just as they do every time free enterprise is forced to compete with the bottomless purse of public enterprise.

HOW AFO PROTECTS CROSSINGS *(Continued from page 17)*

The phantom trial installation was made on a single-track section signaled for two-direction running, where eight through freights and several local freights were handled daily. A mythical crossing was established and all control circuits and relays for crossing signals were installed. The approach west of the mythical crossing was 3,749 ft; the eastern approach was 3,590 ft. Circuits were arranged to establish a 50-ft overlap as the "island" circuit. Equipment consisted of two transmitters and two receivers, all fed from a 10-volt battery. This test lasted more than a year and the AFO track circuits shunted perfectly for each train. There were no failures.

One eastern railroad uses 13 sets of AFO equipment for "island" circuits at highway crossings. Three "island" circuits are installed in existing conventional highway crossing control circuits in double-track, single direction running territory to cut out the crossing protection as soon as the train clears the crossing when making a reverse move. Nine sets are used for "island" circuits at five crossings and two were installed at two crossings, where welded rail is employed, to save the expense of cutting rail and installing insulated joints.

At one major railroad junction, AFO equipment is installed on three mainline tracks to establish "island" circuits for cutting out protection soon after trains clear the crossing. All three tracks are signaled for operation in both directions. Cab signaling and CTC direct operation on a double track mainline and through the junction with a third mainline track. Short arm gates are used as a part of this system, which protects a city street crossing the tracks. No additional insulated joints beyond those already in use for existing signal and highway crossing system were required in the three main tracks. By using these overlay circuits, installation of crossing protection on these three tracks was simplified. The railroad estimates it saved 50% of the cost of installing conventional track circuits.

In another installation, in a terminal area, AFO equipment controls highway crossing signals at two crossings 371 ft apart. This installation is made on a low-speed, industrial track with comparatively short approaches.

To protect a city street crossing adjacent to a passenger station stop, a 660-ft non-coded AFO track circuit was installed on single track in dc propulsion territory signaled for two-direction running. The railroad runs down the center of one street so that normally the traffic lights operate as for a normal street intersection. Upon the shunting of the AFO circuit by an approaching train, however, the traffic light is held red for the cross street. This circuit is arranged so that passenger trains, either eastbound or westbound, can stop in the station area without affecting the traffic lights. When moving toward the crossing, from either direction, the AFO circuit is shunted, causing the traffic lights to hold green for the train.

Single-Track Usage

AFO equipment also has been installed on a single-track line signaled for two-direction operation. The 13-mile line, which leads to an industrial plant, has one passing siding, and traffic is directed by CTC. Under normal operations, 24 trains per day move over the line. Approaches to the crossing are approximately 1,100 ft. To keep short the distance at which the AFO track relay picks up to stop the flashers after the passage of a train, track relay connections were made as close to the crossing pavement as possible. The receding ringing distance (where train leaves circuit causing flashers to cease operation) can be controlled by adjustment of the AFO receiver. This distance varies somewhat with ballast conditions. Under dry ballast conditions a range of from almost zero to not over 25 ft can be obtained. Installation of the AFO equipment obviated need for extensive changes in CTC and interlocking circuits required for a standard crossing protection installation using dc track circuits.

One of the most complete installations of AFO was recently made on two mainline tracks where signaling is for two-direction running. This installation required approaches of 2,700 ft. The highway crossing over the two tracks is protected by bells, flashing signals and short-arm gates. This is the first high speed mainline AFO installation to control the movement of gates. At this installation, receding ringing distances (point where receding trains cause gates to raise) vary between 25 and 35 ft with maximum variation in ballast resistance.

Tuggle Sees Need for Both Diversification, Correlation

Can transport coordination be accomplished best through "diversification" (common ownership) or through "correlation" (voluntary concurrence in through routes and joint rates)?

ICC Chairman Kenneth H. Tuggle thinks a little of both is needed.

He told the National Petroleum Association in Cleveland that present laws permit a considerable degree of diversification—"particularly the ownership or control by railroads of motor carriers and, to a limited extent, water carriers and pipelines." He added:

"Where transport diversification is not permissible under existing statutory standards it seems reasonable to conclude that voluntary intermode marriages hold much higher promise of early fulfilment, in the public welfare, than shotgun weddings, particularly when the ammunition is in the form of a statute or economic pressure of any kind. But, sometimes, as Thomas Jefferson has said, 'It takes time to persuade men to do even what is for their own good.'"

Mr. Tuggle said transport coordination "presents the most insistent and immediate problem confronting the transportation industry today."

FOR SALE

Notice is hereby given that pursuant to provisions of State Property Control Act approved March 29, 1955, the State of Illinois will dispose of the following equipment to the highest bidder; on a single bid basis only for the entire lot.

WRRS Model 10 Highway Crossing Signal, Flashing Light and Automatic Gate Assemblies, with Type 3564 Signal Mechanisms and Type 3565 Gate and Counterweight Arms Assemblies, in the amount of 22 Roadway Gates, 3 Roadway Gates with separate sidewalk arms, 18 Sidewalk Gates, 1 Flashing Yellow Light and "No Left Turn" Mechanism, 1 Signal Mechanism without gate arms.

WRRS Model 10 Crossing Signal, Automatic Sidewalk Gate Assemblies, with GRS Model 2A Signal Mechanisms, in the amount of 7 Station Gates.

14 Griswold Relay Cases, complete with US & S electrical equipment.

Above property will be removed by the Chicago Transit Authority and may be seen in Storehouse 43, 1036 Montrose Avenue, Chicago, Illinois on or after June 1, 1960. Bids must be submitted by 10:00 a.m. June 15, 1960, to be opened in the office of Administrator at 10:00 a.m., June 16, 1960, Room 608, State Armory, Springfield, Illinois.

All of above railroad-highway Crossing Protection material conforms to AAR Signal Section specifications and was installed new less than 3 years ago at temporary railroad-highway grade crossings necessitated by Congress St. Expressway construction in Chicago, Oak Park, and Forest Park, Illinois.

Payment shall be made to the Department of Finance, State of Illinois on notice of acceptance of bid. Removal of property must be made within 15 days from notification.

The contractor shall maintain such insurance as will protect him from claims under workmen's compensation acts, and from any other claims for damages for personal injury, including death, which may arise from operations under this contract, whether such operations be by himself or any subcontractor, or any one directly or indirectly employed by either of them.

Certificate of such insurance shall be filed with and approved by the Department of Finance.

For further information contact Property Control Section, Department of Finance, Room 608, State Armory, Springfield, Illinois.

People in the News

ATLANTIC COAST LINE.—Frank J. Primosch, assistant treasurer, elected assistant vice president and secretary.

H. H. Hill, general superintendent, operating department, Savannah, Ga., appointed general superintendent maintenance of way —system. Temporarily, Mr. Hill's office will be located at Savannah. It will be moved to Jacksonville, Fla., concurrent with the general office move during July.

J. J. Stockard, general superintendent, Jacksonville, appointed assistant general superintendent transportation there.

BOSTON & MAINE.—Paul C. Dunn, assistant general manager—mechanical, Boston Mass., promoted to chief mechanical officer, reporting to **D. A. Benson,** vice president—operations. **Earl C. Cone,** superintendent of shops, North Billerica, Mass., promoted to assistant chief mechanical officer.

CANADIAN NATIONAL.—W. C. Hymus, industrial commissioner, Toronto, Ont., appointed special assistant to vice president, Central region, Toronto, succeeding **S. J. Raymond,** retired. **Lawrence MacIsaac,** industrial engineer, Atlantic region, Moncton, N.B., succeeds Mr. Hymus.

CHICAGO & EASTERN ILLINOIS.—Harvard R. Osmond, commerce counsel, named to the newly created position of assistant vice president—coal traffic.

CHICAGO & NORTH WESTERN.—Herman C. Jacobsen appointed administrative assistant, Chicago.

Norman H. Jones, assistant passenger traffic manager, Chicago, retired April 30.

COTTON BELT.—E. A. Cowan, general agent, Tulsa, Okla., retired May 1.

ERIE.—J. R. Meredith appointed superintendent, dining car department, Jersey City, N.J. Abolished position of manager, dining car department.

Francis L. Collins, general agent, Newark, retired April 30.

ILLINOIS CENTRAL.—Elmer H. Forsing, commercial agent, St. Louis, appointed general agent—coal there, succeeding **James M. Croak,** retired.

LOUISVILLE & NASHVILLE.—James A. Kilduff appointed assistant vice president-finance, New York, in addition to his duties as assistant secretary and assistant treasurer.

H. R. Stewart appointed assistant director of personnel, Louisville, Ky., succeeding **S. P. Strickland,** named supervisor of car utilization, Transportation department (RA, April 25, p. 51).

E. I. Bowman, assistant general freight agent, Louisville, assumed the duties of **Alvin R. Weikel,** assistant general freight agent, deceased. **Fred Roberson** named to succeed Mr. Bowman. **Jesse D. Buehler,** freight traffic agent, Cincinnati, retired March 31.

MILWAUKEE.—Virgil E. Glosup, assistant vice president-operation, Chicago, appointed assistant vice president-chief engineer there, to succeed **William G. Powrie,** chief engineer, retired.

MISSOURI PACIFIC.—A. E. Wiethuchter appointed tax auditor, St. Louis, to succeed **A. C. Peterson,** who retired April 30.

C. C. Cantrell appointed assistant superintendent of safety, St. Louis.

J. V. Utley named general roadmaster and assigned supervision of track construction in automatic retarder classification yard at North Little Rock, Ark.

MONON.—Timothy W. O'Rourke, commercial agent, New York, appointed general agent in charge of the newly opened freight traffic sales office at 451 Old South Building, 294 Washington Street, Boston 8, Mass.

Wiley S. Underwood appointed general agent, New Orleans, succeeding **J. M. Russell.**

NEW HAVEN.—Eugene E. Hunt appointed commerce counsel, New Haven, Conn. Mr. Hunt will take part in representing the road in Interstate Commerce Commission matters, such as rate hearings, investigations and service applications.

NEW YORK CENTRAL.—Joseph D. Boylan, director of market research, appointed assistant freight sales manager, New York.

NORFOLK & WESTERN. — F. Porter Blackard appointed district freight and passenger agent, Petersburg, Va., succeeding **Joe C. Dellinger,** named general agent, Portsmouth, Ohio. **Bryant R. Goodall** appointed foreign freight agent, Norfolk.

PACIFIC FRUIT EXPRESS.—J. J. Rogers, general superintendent, Houston, retired April 30.

PENNSYLVANIA.—Carl S. Herr, passenger manager, Lake Region, Cleveland, named passenger manager—manager public relations at that point.

RAILWAY EXPRESS AGENCY.—Robert Adler appointed manager, coordinated traffic development, New York. Mr. Adler will coordinate sales developmental aspects of the intensified REA program on containerization, piggybacking, and the use of highway trucks, supplementing long-haul operations over the nation's railroads. Mr. Adler was formerly eastern district supervisor of Mercury Motor Express, Tampa, Fla.

Alan M. White appointed to the new post of assistant to director, Pricing division, New York. Mr. White was formerly with the Research Group of the Traffic Executive Association—Eastern Railroads, New York.

RUTLAND.—Sol Rosenberg elected treasurer, succeeding the late **Jack H. Weiss.**

SOUTHERN.—William C. Richardson, assistant to vice president—traffic, Washington, D.C., appointed freight traffic manager there, succeeding the late **Carl B. Walker. Frank S. Rains,** commercial agent, Memphis, Tenn., appointed district freight agent, Huntsville, Ala., succeeding the late **Ernest C. Brown.**

SOUTHERN PACIFIC.—C. E. Ward, freight traffic manager, Chicago, appointed to the newly created position of assistant general traffic manager (freight and passenger), with headquarters at New York and Chicago. **P. E. Carneck,** freight traffic manager, New York, named traffic manager in charge of midwestern territory, Chicago. **G. E. Maccubbin,** general agent, freight department, New York, advanced to assistant to the general traffic manager, Chicago, succeeding **J. J. Harr,** named to the new position of assistant traffic manager, New York.

TEXAS & NEW ORLEANS.—H. B. Sturman, auditor of miscellaneous accounts, Houston, retired April 30.

L. A. Brockwell, general traffic manager, Houston, retired April 30.

Frank J. Primosch
ACL

Virgil E. Glosup
Milwaukee

Robert Adler
REA

William C. Richardson
Southern

WESTERN TRUNK LINE COMMITTEE.—Robert E. Barr, freight traffic manager, rates division, **Burlington,** appointed chairman of the Committee, succeeding **George A. Moller,** who retired April 30.

OBITUARY

Elmer C. Gordon, 59, assistant freight sales manager, **Chicago & Eastern Illinois,** died April 14 at his home in Chicago.

Stewart V. McEnery, 60, retired superintendent, **Railway Express Agency,** died recently.

Prof. Herbert F. Moore, 84, retired University of Illinois engineer, died April 16 in LaGrange, Ill. Prof. Moore is credited with research which saved American railroads more than $100,000,000. He was a past president of the American Society for Testing Materials (1927-28).

Alvin D. Johnston, 42, assistant sales manager of bolt products and manager of railroad sales, Sheffield division of **Armco Steel Co.,** died April 24 at Kansas City, Mo.

Supply Trade

Robert Aldag, manager of the railroad division, **Fairbanks, Morse & Co.,** has been promoted to manager of locomotive product sales, Beloit, Wis. **Hugh Donaldson** appointed central regional manager, locomotive product sales, Chicago, and **E. J. Phillips** named eastern regional manager, locomotive product sales, Fair Lawn, N.J.

J. P. Gardiner has been appointed product manager for railway car parts for **American Car & Foundry Division of ACF Industries, Inc. Walter H. Pogue, Jr.** has replaced Mr. Gardiner as St. Louis district representative for railway sales.

Leonard A. Marquardt has been appointed vice president—sales of **W. H. Miner, Inc.**

You Ought To Know...

Miles per hot box car set off between division terminals was 202,390 for 1959. This was the best record since the 209,479 miles per hot box made in 1956, but slightly under the yearly average of 203,-262 miles per hot box compiled during the last ten years.

Family fares and lower individual round-trip fares are going into effect on Louisville & Nashville June 1. Savings on family travel will range up to 25%; savings for individual passengers will average almost 17%.

The world's largest tank car—one of two 30,000-gal., 85-ft units built by Union Tank Car for Tuloma Gas Products—went on display last week in Chicago, in conjunction with the annual meeting of the Liquefied Petroleum Gas Association. The cars, built to Union's "Hot Dog" design, were scheduled to go into regular service at the end of the week.

Microwave will be installed by the New York Central between its new Avon yard at Indianapolis and its Southern District headquarters in the city. The 12.2-mile, one hop system (no repeaters) will have 24 voice channels and 6 telegraph channels.

Reduced furlough fares for uniformed military personnel have been extended to Dec. 31 by the railroads. The reduced fares were scheduled to expire June 30.

Signaling and communications developments will be discussed at the annual sectional meeting of the Cincinnati Conference, AAR Signal Section, at the Netherland Plaza Hotel in Cincinnati May 5. Guest speaker will be Frank S. Worthington, vice president of the Southern.

Railway Express has signed an agreement with United Air Lines providing coordinated air freight-surface express services to and from non-airport points. Shipments may be originated as air freight and delivered to final destination as surface express, or vice versa. Charges will be a combination of the applicable air and surface rates. (Another airline recently extended its service beyond air terminal points through agreements with individual truckers.)

Third class "sleeper coaches" are being placed on all long-distance trains in India. They're for the use of passengers traveling over 500 miles, and involve no extra charge. Orders have been placed for 400 of the new coaches, which have triple-deck berths.

Crews outnumber passengers on some trains that the unions want railroads to continue, AAR General Attorney Harry J. Breithaupt, Jr., told the Senate Surface Transportation subcommittee. He said "nothing but chaos and confusion" would result from legislation now before Congress to restrict management's right to discontinue trains.

Analysis of maintenance costs alone on the Missouri River shows that the taxpayers bore a cost of 6.52 cents per ton-mile of river traffic between Sioux City, Iowa, and the mouth of the river during the 20 years through 1958, according to Burlington President H. C. Murphy. Average rail ton-mile revenues during the same period were only 1.17 cents. Mr. Murphy's conclusion: "A system of user charges should be placed in effect quickly."

First large-scale application of Pullman-Standard's 30-inch travel cushion underframe will be made on 200 70-ton box cars to be built for Southern (RA, April 25, p. 55). Test installations were made previously on an 85-ft flat car and on another flat where the gear was mounted on the car floor to handle a container movement. P-S shops are now completing a third installation, on a Western Pacific box car.

The future of suburban transport must be integrated with civic redevelopment. This was the consensus of the RSPA seminar on "urban and suburban transportation" in Chicago last week. Civic planners were told to stop projecting trends and "tell us what you want us to do to halt the deterioration of focal cities." Railroads were advised to "make your plans and promote them."

Freezing of rail freight rates "for a period of years" has been recommended to the Royal Commission on Transportation by the Canadian Federation of Agriculture. The farm organization also asked rejection of the railway proposal for government assistance to offset low statutory rates on western export grain. It urged greater productivity and efficiency on the railways and said featherbedding should be closely studied.

Enslavement to "working methods of the past" is crippling the railroad industry, Pennsylvania President Allen J. Greenough told University of Pennsylvania alumni in Philadelphia last week. He said the PRR alone foots a featherbedding bill of $50,000,000 a year, added: "We simply want to establish up-to-date working practices so we can climb back aboard the free enterprise system and make some money."

Mounting losses have forced Western Pacific to move for discontinuance of passenger trains 1 and 2 —the RDC "Zephyrettes," operating between Oakland, Calif., and Salt Lake City, Utah. WP says its direct out-of-pocket loss last year totaled $255,000. Average patronage in '59 dropped to 12 passengers per trip. Operating costs averaged more than $1 per mile; total revenues amounted to only 12 cents per mile.

Coordinated Associations will meet in Chicago on the previously established dates of Sept. 10-13, 1961. These organizations turned down an invitation by the Railway Supply Manufacturers Association to change their meeting dates to coincide with June 1961 meetings of AAR's Mechanical Division and RSMA exhibits.

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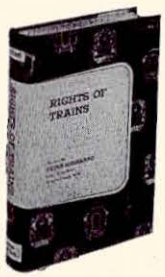

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Nationalization Solves No Problems

Practically every big country in the free world has been indulging in quack economics in its dealing with transportation. The result is that transportation in these countries is costing much more than it ought to. Billions are being expended for transportation that could be spent more usefully for other goods and services (e.g., national defense or education). The Communist colossus is not making this mistake. Hence, Russia gives fair promise of having, soon, at least as effective a transportation system as any country in the West—and at a fraction of the cost for upkeep, plant renewal, and labor expense.

The perverted economics which is producing transportation waste in the West—far worse in the U.S.A. than anywhere else—is the senseless duplication of facilities, and proliferation of public investment in transportation plant. This waste is made possible by the humbug that economic demand justifies any and all the huge expenditures that have been, and are being, made on highways and other publicly owned transportation installations.

Economic demand (in the self-supporting, free-enterprise sense of the word) has not been allowed to set limits on expenditures for highways, waterways and air transport facilities. Railroads, meantime, are operating under the old book of rules. They cannot get investment money to add to or improve their plant unless the evidence is compelling that the outlay will earn more than enough to repay all capital, maintenance and operating costs and taxes.

By contrast, the money expended upon highways, waterways and air transport facilities is appropriated politically and is spent politically—due care being taken not to let the full burden of the costs fall on the users of these facilities. The result is that this undisciplined expenditure of public funds may, and often does, divert traffic from economical rail movement to a method which is much more costly. It is next to impossible that a centrally controlled economy, such as that of Russia, could or would fall into such an egregious blunder.

The free-market test of the wisdom of capital expenditures—where all such outlays are expected to earn a profit—is a more effective method than Russia's centralized control for directing capital expenditure to the places where it will produce the highest return for the least outlay. But America—and practically all big countries in the West—have abandoned "the test of the market place" for their politically motivated transportation expenditures.

Even those countries in the free world which have abandoned private ownership of railroads are still using the straight yardstick of the free market to measure the productivity of capital expenditures on railways. But they are not using the same yardstick as a gage of the profitability of public expenditures on other types of transportation.

Here is the difference: If they calculate the economics of a capital outlay on railways, they try to figure out what the ensuing profit will be *to the railway enterprise*. But, if they are seeking to justify expenditures on highways, they don't consider profitability to the highway system.

Instead, their usual practice is to estimate the total time-saving to all users of the proposed highway and figure out how much money such time-saving should be worth *to the users*. As Sir Reginald Wilson of the British Transport Commission has pointed out, if the economic justification for investment in railways were thus to be estimated—then almost any expenditure on railways would show an astronomical "return" on the proposed investment.

•

If honest economics were applied to the problem of equitable financing of all investment in transportation facilities, railroads would prosper in their own right. There would be no demand or justification for nationalization—which is little more than a device to enable deficit-ridden railroads to survive as dependents of the public treasury.

Under equitable financing each type of transportation would prosper relatively to its economic merit, and not in relation to its political power, as at present. Transportation would be an honest business—and not the kept woman that, in large measure, so much of it now is.

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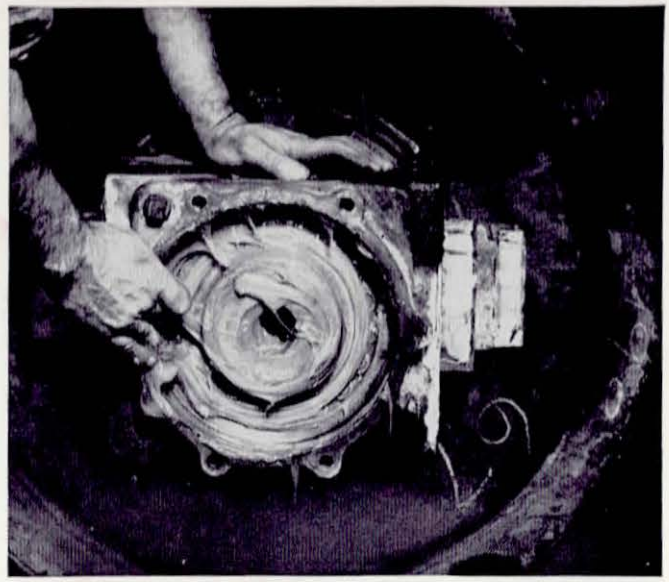

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